



## **ENVIRONMENTAL PROTECTION AGENCY**

### **40 CFR Part 300**

**[EPA-HQ-OPA-2006-0090; FRL-4526.1-01-OLEM]**

**RIN 2050-AH16**

### **National Oil and Hazardous Substances Pollution Contingency Plan; Monitoring Requirements for Use of Dispersants and Other Chemicals**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA or the Agency) is amending the requirements in Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) that govern the use of dispersants, other chemicals and other spill mitigating substances when responding to oil discharges into waters of the United States. Specifically, this action establishes monitoring requirements for dispersant use in response to major oil discharges and/or certain dispersant use situations in the navigable waters of the United States and adjoining shorelines, the waters of the contiguous zone, and the high seas beyond the contiguous zone in connection with activities under the Outer Continental Shelf Lands Act, activities under the Deepwater Port Act of 1974, or activities that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States, including resources under the Magnuson Fishery Conservation and Management Act of 1976 (“navigable waters of the United States and adjoining shorelines”). These new monitoring requirements are anticipated to better target dispersant use, thus reducing the risks to the environment. Further, the amendments are intended to ensure that On-Scene Coordinators (OSCs) and Regional Response Teams (RRTs) have relevant information to support response decision-making regarding dispersant use.

**DATES:** This final rule is effective on **[INSERT DATE 180 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** EPA has established a docket for this action under Docket ID No. EPA-HQ-OPA-2006-0090. All documents in the docket are listed on the <http://www.regulations.gov> web site.

Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form.

Publicly available docket materials are available electronically through <http://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:** For general information, contact the Superfund, TRI, EPCRA, RMP, and Oil Information Center at 800-424-9346 or TDD at 800-553-7672 (hearing impaired). In the Washington, DC metropolitan area, contact the Superfund, TRI, EPCRA, RMP, and Oil Information Center at 703-412-9810 or TDD 703-412-3323. For more detailed information on this final rule contact Gregory Wilson at 202-564-7989 ([wilson.gregory@epa.gov](mailto:wilson.gregory@epa.gov)). The contact address is: U.S. Environmental Protection Agency, Office of Emergency Management, Regulations Implementation Division, 1200 Pennsylvania Avenue, NW, Washington, DC 20460-0002, Mail Code 5104A, or visit the Office of Emergency Management website at <http://www.epa.gov/oem/>.

**SUPPLEMENTARY INFORMATION:** The contents of this preamble are:

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## Part 300 – National Oil and Hazardous Substances Pollution Contingency Plan

### I. General Information

In April 2010, the Deepwater Horizon underwater oil well blowout discharged significant quantities of oil into the Gulf of Mexico. The blowout discharged oil from one mile below the sea surface. Approximately one million gallons of dispersants over a three-month period were deployed on surface slicks over thousands of square miles of the Gulf, and approximately three quarters of a million additional gallons of dispersants were, for the first time, injected directly into the oil gushing from the well riser. This raised questions about the challenges of making dispersant use decisions in response operations for certain atypical dispersant use situations. EPA is establishing new monitoring requirements under Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) to address these challenges. Specifically in this action, the Agency establishes monitoring requirements for dispersant use in response to major discharges and/or certain dispersant use situations: any subsurface use of dispersant in response to an oil discharge, surface use of dispersant in response to oil discharges of more than 100,000 U.S. gallons occurring within a 24-hour period, and surface use of dispersant for more than 96 hours after initial application in response to an oil discharge. These new requirements are intended to address the challenges of atypical dispersant use situations, including those identified

during Deepwater Horizon.

EPA estimates industry may incur a total incremental cost of approximately \$32,000 to \$3.0 million annually. Note that the annualized cost is the same for both the 3% and 7% discount rates because the cost is the same every year prior to being annualized. This action does not impose significant impacts on a substantial number of small entities. The Regulatory Impact Analysis, which can be found in the docket, provides more detail on the cost methodology and benefits of this action.

#### COST OF THE FINAL RULE

	Annualized Cost, 20 years	
	Annualized at 3%	Annualized at 7%
Scenario 1 -- Low End	\$32,124	\$32,124
Scenario 4 – High End	\$3,033,569	\$3,033,569

## II. Entities Potentially Affected by This Proposed Rule

NAICS Code	Industrial Category
211120	Crude Petroleum Extraction
211130	Natural Gas Extraction
324110	Petroleum Refineries
424710	Petroleum Bulk Stations and Terminals
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)
483111	Deep Sea Freight Transportation
483113	Coastal and Great Lakes Freight Transportation
486110	Pipeline Transportation of Crude Oil

The list of potentially affected entities in the above table includes oil exploration and production industries with the potential for an oil discharge into navigable waters of the United States and adjoining shorelines. The Agency's goal is to provide a guide for readers to consider regarding entities that potentially could be affected by this action. However, this action may affect other entities not listed in this table. If you have questions regarding the applicability of

this action to a particular entity, consult the person(s) listed in the preceding section entitled

## **FOR FURTHER INFORMATION CONTACT.**

### **III. Statutory Authority and Delegation of Authority**

Under sections 311(d) and 311(j) of the Clean Water Act (CWA), as amended by section 4201 of the Oil Pollution Act of 1990 (OPA), Pub. L. 101-380, the President is directed to prepare and publish the NCP for removal of oil and hazardous substances. Specifically, section 311(d)(2)(G) directs the President to include a Schedule identifying “(i) dispersants, other chemicals, and other spill mitigating devices and substances, if any, that may be used in carrying out the Plan, (ii) the waters in which such dispersants, other chemicals, and other spill mitigating devices and substances may be used, and (iii) the quantities of such dispersant, other chemicals, or other spill mitigating device or substance which can be used safely in such waters” as part of the NCP. The Agency has promulgated both the NCP, see 40 CFR 300.1 *et seq.*, and the schedule of dispersants as required by section 311 (d)(2)(G), known as the NCP product schedule. See 40 CFR 300.900 *et. seq.* The President is further authorized to revise or otherwise amend the NCP from time to time, as the President deems advisable. 33 USC 1321(d)(3). The authority of the President to implement section 311(d)(2)(G) of the CWA is delegated to EPA in Executive Order 12777 (56 FR 54757, October 22, 1991). Subpart J of the NCP establishes the framework for the use of dispersants and any other chemical agents in response to oil discharges (40 CFR part 300 series 900).

### **IV. Background**

In the United States and around the world, chemical agents are among the oil spill mitigation technologies available that responders may consider. Subpart J of the NCP sets forth the regulatory requirements for the use of chemical agents, including provisions for product testing and listing, and for authorization of use procedures. These requirements provide the structure for the On-Scene Coordinator (OSC) to determine in each case the waters and quantities in which dispersants or other chemical agents may be safely used in such waters. This

determination is based on all relevant circumstances, testing and monitoring data and information, and is to be made in accordance with the authorization of use procedures, including the appropriate concurrences and consultations, found within the regulation. When taken together, the Subpart J regulatory requirements address the types of waters and the quantities of listed agents that may be authorized for use in response to oil discharges. EPA believes the wide variability in waters, weather conditions, organisms living in the waters, and types of oil that might be discharged requires this approach.

The Deepwater Horizon underwater oil well blowout in 2010 raised questions about the challenges of making chemical agent use decisions in response operations, particularly for certain atypical dispersant use situations. To address these challenges, in 2015 the Agency proposed amendments to Subpart J of the NCP that included revisions to the existing product listing, testing protocols, and authorization of use procedures, as well as new provisions for dispersant monitoring. The proposed new monitoring provisions under Subpart J were focused on dispersant use in response to major oil discharges and on certain dispersant use situations in the navigable waters of the United States and adjoining shorelines. The proposed new monitoring provisions were also aimed at ensuring that the response community is equipped with relevant data and information to authorize and use the products in a judicious and effective manner. Final action on the proposed revisions to the product listing, testing protocols, and authorization of use procedures will be taken separately from this action.

## **V. This Action**

This final action addresses environmental monitoring of dispersant use in response to major discharges and to certain dispersant use situations. Specifically, in this action, the Agency establishes monitoring requirements for any subsurface use of dispersant in response to an oil discharge, surface use of dispersant in response to oil discharges of more than 100,000 U.S. gallons occurring within a 24 hour period, and surface use of dispersant for more than 96 hours after initial application in response to an oil discharge. The discussion below explains the

specific requirements and also summarizes and responds to public comments received on the proposal.

#### ***A. Monitoring the Use of Dispersants***

The goal of establishing a Schedule under the NCP is to protect the environment from possible damage related to spill mitigating products used in response to oil discharges. The new monitoring requirements for certain discharge situations in this action supplements the existing regulatory provisions under Subpart J which already include test data and information requirements for chemical agents as well as procedures for authorizing the use of those agents to respond to oil discharges and threats of discharge.

The new §300.913 establishes requirements for the responsible party to monitor any subsurface use of dispersant in response to an oil discharge, surface use of dispersant in response to oil discharges of more than 100,000 U.S. gallons occurring within a 24 hour period, and surface use of dispersant for more than 96 hours after initial application in response to an oil discharge, and to submit a Dispersant Monitoring Quality Assurance Project Plan (DMQAPP) to the OSC. The requirements are established for the responsible party as they operate in those environments where applicable discharges may occur and should be in the best position to monitor the response. The Agency removed language included in the proposal that specified these actions were to be taken “As directed by OSC...”. The clarification in this action is unnecessary as 33 USC 1321 and §300.120 of the NCP already establish the OSC’s oversight role over the responsible party. The Agency has also changed language associated with the DMQAPP to remove the proposed “for approval” qualifier in this final action. The change is to better reflect that the requirement to develop the DMQAPP is directed at the responsible party, and that the provision is not intended to establish a DMQAPP approval timeline for the OSC relative to dispersant use. Rather, the DMQAPP submission is intended to provide the OSC, and other agencies with NCP responsibilities, with a better understanding of the monitoring data to inform dispersant use decisions. The OSC may request that response support agencies provide

feedback on the submitted DMQAPP and has the discretionary authority to require the responsible party to address any concerns associated with it. The responsible party is required to implement the new monitoring requirements when these dispersant use conditions are met, and for the duration of dispersant operations. The monitoring and data submissions that serve as the basis of this rule were established in the 2013 National Response Team (NRT) *Environmental Monitoring for Atypical Dispersant Operations* document. The Agency is aware that industry and OSROs have been preparing to monitor dispersant use this rule since the issuance of the NRT guidance document in 2013. The Agency encourages the continuation of planning and preparedness efforts and continues to support these efforts with our interagency partners.

Subpart J of the NCP is intended to provide tools that support planning for and responding to oil discharges. To this end, the monitoring requirements for certain discharge situations promulgated in this final rule serve as a complement to the existing regulatory approach under Subpart J. When dispersants are applied in response to an oil discharge, environmental field monitoring data can support decision-making in dispersant use operations by gathering site-specific information on the overall effectiveness, including the transport and environmental effects of the dispersants and the dispersed oil. Environmental field monitoring data is at the core of any response, as without it the extent of the problem cannot be evaluated nor can a path forward for an appropriate response be established.

The purpose of monitoring subsurface application is to characterize the dispersed oil, follow the plume integrity and transport with the underwater current, and identify and assess the potential adverse effects from the dispersed oil. Product testing conducted under standardized laboratory conditions is useful for comparison between different products. However, standardized laboratory conditions do not necessarily reflect field conditions. Monitoring of agents in the field informs the OSC and support agencies on the overall effectiveness of dispersant use, including the environmental effects and transport of dispersed oil. These new monitoring requirements, in conjunction with the existing testing and information requirements



for chemical agents, and the procedures for authorizing the use of those agents, serve to protect the environment from possible damage related to spill mitigating products used.

*1. General*

Several Non-Governmental Organizations (NGO), private citizens, and local, state, and federal government agencies generally supported the proposed new monitoring requirements, with some also requesting some clarifications. A commenter stated that while they agree with the concept of requiring monitoring for dispersant use, the current language undermines the contingency planning process and illegally assigns responsibilities to the OSC and the responsible party. The commenter stated this usurps authority from all other agencies, tribes and the public, which they see as a breach of the responsibilities of the federal government to protect public trust resources.

The Agency agrees with commenters expressing support for this final action. The Agency disagrees with the comments that this action undermines the contingency planning process and illegally assigns responsibilities to the OSC and the responsible party. The EPA acknowledges the importance of effective contingency planning to the achievement of a timely and effective response. Planning and preparedness provisions are currently addressed under Subpart C of the NCP or as codified in regulations implementing CWA 311(j)(5) authorities as delegated to other NRT member agencies by EO 12777. The Agency is amending the proposed language in the opening paragraph of the monitoring section to clarify the new provisions are for the responsible party to implement. EPA disagrees with comments that state the structure of the new monitoring requirements usurps other governmental authorities or constitutes a breach of responsibilities of the federal government to protect public trust resources. The NCP designates the OSC as the person who is authorized to direct response efforts and to coordinate all other efforts at the scene of a discharge, including the new monitoring requirements. The NCP designates those Agencies providing the OSC for a response, including designating USCG to provide the OSC for oil spills into or threatening the coastal zone. See, e.g., 40 CFR 300.120. The NCP requires that the OSC

ensure that the natural resource trustees are promptly notified in the event of any discharge of oil to the maximum extent practicable as provided in the Fish and Wildlife and Sensitive Environments Plan annex to the Area Contingency Plan (ACP) for the area in which the discharge occurs. The NCP also directs the OSC and the trustees to coordinate assessments, evaluations, investigations, and planning with respect to appropriate removal actions, including the OSC consulting with the affected trustees on the appropriate removal action to be taken. Finally, none of new requirements in this action in any way limit current existing NCP authorities, but rather they inform the OSC and facilitate compliance with regulatory responsibilities.

Several commenters supported the proposed amendments and suggested the monitoring requirements be extended to all products listed on the Product Schedule. Another commenter expressed similar concerns, stating that monitoring should occur anytime any product is used during a response activity. The commenter suggested these additional requirements for product effectiveness data would then be available for future releases, allowing for a refined set of response options. Another commenter stated that EPA should include language indicating that the new monitoring requirements are a minimum and that additional monitoring may be required based on conditions, dispersant type, and location. A commenter also recommended that, at a minimum, the requirements include monitoring of public health effects following the dispersant application.

The Agency interprets the specific requirements set forth in this final action as the minimum set of monitoring activities expected during a response involving the atypical dispersant use conditions specified. However, the Agency does not believe it is necessary to amend regulatory text for this purpose. The new requirements in no way impede the existing OSC authority<sup>1</sup> to direct the responsible party to conduct additional monitoring if deemed necessary due to incident-specific circumstances including location, oil type, or conditions of

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<sup>1</sup> See 33 U.S.C. 1321(c); See also 40 CFR 300.120, 40 CFR 300.305.

use. EPA notes that incident-specific circumstances may extend beyond the examples provided. The incident-specific data gathered through these new monitoring requirements, in conjunction with the OSC authority to direct additional monitoring, offers flexibility in accounting for differences in regional environments that may have the potential to impact any discharge situation. The USCG provides a designated OSC for oil discharges into or threatening the coastal zone as per 40 CFR 300.120. The OSC authorizes the use of chemical agents in accordance with Subpart J and other applicable provisions of the NCP.

The Agency reiterates that the new provisions are focused on environmental monitoring and are applicable only to the following atypical dispersant use situations: any subsurface use of dispersant in response to an oil discharge, surface use of dispersant in response to oil discharges of more than 100,000 U.S. gallons occurring within a 24-hour period, and any surface use of dispersant for more than 96 hours after initial application in response to an oil discharge. However, these new requirements in no way preclude the OSC from directing the monitoring of any substance, including chemical agents used, or their use within different time frames than those listed above, as part of the existing authorities set forth in the NCP. The Agency is clarifying the applicability provisions of the monitoring requirements relative to the duration of their implementation. Specific to subsurface application of dispersants, the Agency is offering language further clarifying the monitoring provisions are to be implemented for the entire duration of the subsurface dispersant use. For dispersant application on the surface in response to oil discharges situations of greater than 100,000 U.S. gallons occurring within a 24-hour period, the monitoring provisions are to be implemented as soon as possible for the entire or remaining duration of surface dispersant use, as applicable. Finally, for any dispersant used on the surface for more than 96 hours after initial application, the new monitoring provisions in this action are to be implemented for the remaining duration of surface dispersant use, consistent with the 2013 National Response Team (NRT) *Environmental Monitoring for Atypical Dispersant Operations*

document. Additional discussion regarding this clarifying language is found in Section C of this preamble – Water Column Sampling.

While the new provisions established in this action are specific to environmental monitoring, the Agency notes there are other impacts potentially resulting from an oil discharge and associated response operations that are addressed under different provisions of the NCP. Of note, the OSC initiates a preliminary assessment as per the NCP. This preliminary assessment is conducted using available information and is supplemented where necessary and possible by an on-scene inspection. 40 CFR 300.305(a)-(b). The preliminary assessment undertaken by the OSC in accordance with 40 CFR 300.305 includes an evaluation of the threat to public health or welfare of the United States or the environment.

A commenter suggested that for oil spill events where product preauthorization has not been granted, the rule should require that authorization of use be contingent on the Area Committee having a current Quality Assurance Project Plan (QAPP) approved by the RRT, NRT, and federally recognized Tribal representatives for the collection and reporting of all environmental data as part of the preauthorization plan. The commenter further suggested authorization be contingent on the Natural Resource Trustees having completed baseline ecosystem studies in the area impacted by the spill. Another commenter recommended that the development, approval, and update process for the QAPP be moved under the provisions for authorization of chemical agent use. They also suggested that withdrawal of concurrence, regarding product use following protocols also under authorization of use provisions, would mean that use of a product would cease until concurrence was reestablished.

A commenter proposed that the Natural Resource Trustees should select and manage peer-reviewed scientific studies that implement the approved QAPP for spills where the preauthorization conditions for product use are met. The commenter suggested the Natural Resource Trustees seek concurrence from the Department of Labor/OSHA and Department of Human Health and Services/CDC representatives to the RRT, federally recognized Tribal

representatives, and the RRT representative from the state(s) with jurisdiction over waters and adjoining shorelines within the geographic area impacted for these scientific studies. Other commenters generally suggested that the proposed requirements ensure peer-review as part of the monitoring process.

The Agency recognizes that any monitoring to be conducted should follow a QAPP and has included new provisions to that effect. The Agency is modifying the provision by specifically requiring a DMQAPP to avoid confusion with the existing definition of a QAPP in the NCP. Further, given that the monitoring requirements are directed at the responsible party, the Agency believes it is most appropriate for the responsible party to develop a DMQAPP covering the environmental data collection, which includes quality assurance documentation. The DMQAPP developed by the responsible party is to be submitted to the OSC to allow for a better understanding of the monitoring data. The Agency encourages the use of the guidance in *Section 4.0 Quality Assurance Project Plan* of the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* document for preparation of the DMQAPP. EPA also encourages the RP to develop a DMQAPP, to the maximum extent possible, as part of the RP's response planning to facilitate monitoring preparedness among other members of the response community. The OSC has the expertise of the Scientific Support Coordinator (SSC) and other pertinent response agencies available to provide feedback on the submitted DMQAPP, as well as the discretionary authority to require the responsible party to address any concerns raised. For oil discharges in the coastal zone it is National Oceanic and Atmospheric Administration (NOAA) that generally provides the SSC. The Agency disagrees that these new monitoring provisions cannot be implemented without having a DMQAPP specifically included in the applicable ACP. Likewise, implementation of the new monitoring requirements has no impact on baseline ecosystem studies conducted by the Natural Resource Trustees. The Agency notes that the roles and responsibilities of the Natural Resource Trustees are delineated under the current NCP, and that commenters' recommendations specific to a DMQAPP evaluation by the Natural Resource

Trustees to select and manage peer-reviewed scientific studies are outside the scope of this action. Similarly, issues regarding authorization of chemical agent use are outside of the scope of this action.

A commenter supported the proposed monitoring requirements but suggested they include establishing baseline conditions prior to product application. Another commenter also suggested the requirements include pre-application monitoring of biological resources. A commenter suggested the concept of short-term damage assessments be included in this section, including rapid characterization of vulnerable aquatic species and habitats, and potential impacts to public health. Similarly, commenters also recommended longer-term monitoring and damage assessment activities as part of these new requirements; a commenter stated that monitoring should occur for the duration of the response and until the product is no longer detected in the water. Another commenter suggested that effects of dispersants on aquatic organisms may take longer to manifest themselves than the duration of monitoring that occurs during a spill response and therefore suggested that monitoring continue for several months following the dispersant application to allow for the assessment of both acute and chronic effects on fish and other species.

EPA agrees with commenters who requested that the new monitoring requirements also include site-specific baseline monitoring, prior to application of dispersant, and is amending the proposed rule text to reflect this change in the final rule. The Agency believes this a rational and necessary addition since an understanding of baseline conditions is required for understanding the effects of dispersants in a specific area. The Agency believes that baseline monitoring will provide pre- and post- dispersant application data to better evaluate the effects, including physical dispersion, of the dispersants. Further details on this change to the proposed requirements is found in the *Water Column Sampling* discussion in this preamble. This final action also recognizes the need for ecological characterization. The new monitoring provisions include requirements for the responsible party to characterize the ecological receptors (e.g.

aquatic species, wildlife, and/or other biological resources), their habitats, and exposure pathways that may be present in the discharge area. Specific comments on these new provisions are found in the *Ecological Characterization* discussion in this preamble. The Agency notes that the new monitoring provisions are for ecological monitoring of atypical dispersant use operations subject to this regulatory action (i.e., any subsurface dispersant use, prolonged surface dispersant use, and surface dispersant use in response to major discharges). Other potential impacts from an oil discharge and from other associated response operations are addressed under different provisions of the NCP. The OSC initiates a preliminary assessment under the NCP. This preliminary assessment is conducted using available information and is supplemented where necessary and possible by an on-scene inspection. The preliminary assessment includes an evaluation of the threat to public health or welfare of the United States or the environment.

The Agency recognizes that some effects of dispersant use on the aquatic ecosystem may take longer to manifest than the duration of dispersant application or the monitoring time frames during a response. However, the new field monitoring provisions are designed to support and inform operational decisions by gathering site-specific information on the overall effectiveness, including the transport and environmental effects of the dispersant and the dispersed oil. Monitoring the overall effectiveness of dispersant use in the field provides the RRT member agencies with concurrence and consultation roles with information for operational decision making during atypical dispersant applications.

Adverse effects on ecological receptors from exposures to dispersant use depend on the length of time and concentration of the exposure, which are dependent on the transport of the dispersed oil. Given that each oil discharge represents a unique situation, the Agency believes comprehensive monitoring is important for those discharge situations which are addressed in this final action. This monitoring data will enhance the information available for an effective response without delaying the use of dispersants. The Agency believes that comprehensive monitoring in certain discharge situations is necessary to determine the overall effectiveness of

dispersants and should extend beyond the initial dispersant application to include the transport and potential environmental effects of the dispersant and dispersed oil in the water column.

While all the data collected for dispersant operations purposes may be made available to Natural Resource Damage Assessment (NRDA) personnel as soon as practicable, the new monitoring requirements are intended to inform operational decision-making specific to atypical dispersant use; use of collected data in the NRDA process is incidental to this rulemaking. The NRDA data gathering efforts apply more broadly than just to dispersant use as part of the response.

A commenter generally supported the concept of monitoring following dispersant use and recommended any monitoring data generated during a response acknowledge the uncertainty associated with the difficulty in estimating the effectiveness of dispersant actions in the field. A commenter recommended that EPA develop a set of standards for assessing dispersant application monitoring data in the field to supplement and validate results from laboratory-based studies.

The Agency agrees that because of the nature of the operations, a certain degree of uncertainty associated with monitoring data generated during a response is to be expected. The Agency believes that the requirement for the responsible party to develop and submit a DMQAPP will help address some of those uncertainties. The Agency expects that the DMQAPP will address sample collection methodology, handling, chain of custody, and decontamination procedures to ensure the highest quality data possible will be collected and maintained. The Agency disagrees that it should develop a set of standards for assessing dispersant application monitoring data in the field to supplement and validate results from laboratory-based studies. Product testing conducted under standardized laboratory conditions is useful for comparison between different products. However, standardized laboratory conditions do not necessarily reflect field conditions. The monitoring requirements in this final action are intended to supplement and compliment SMART procedures, as applicable, and inform the OSC and support agencies on the overall effectiveness of dispersant use for decision-making in the response.



A commenter expressed concerns that the proposed requirements may not account for regional differences, which would be dealt with more effectively at the regional level, as opposed to the national level. This commenter also requested clarification on the distinction between dispersant efficacy and toxicity. The commenter suggested the reference to “overall effectiveness” is confusing and should be revised to clearly address both the effectiveness and toxicity of the dispersant and dispersed oil. The commenter also suggested that local field efficacy testing be conducted prior to dispersant use to understand site-specific conditions and that efficacy testing be conducted as outlined in the Special Monitoring of Applied Response Technologies (SMART) Tier I, Tier II, and Tier III protocols during the application monitoring. The commenter recommended that, if this type of monitoring is not possible, dispersant use be considered on a case-by-case basis as outlined under the regulatory provisions for authorization of chemical agent use.

The Agency again notes the OSC has authority to direct additional monitoring and data collection beyond that which is specified in the new requirements, including for dispersant use situations outside the scope of the new provisions. This may include local field efficacy testing prior to dispersant use to better understand and account for site-specific conditions in operational decision-making. While the SMART protocols may be utilized in pre-deployment field testing and as part of the overall response, the atypical uses of dispersant during a response that are addressed in this action were neither envisioned nor addressed in the existing SMART monitoring program. The requirements in this final action follow recommendations from the *Environmental Monitoring for Atypical Dispersant Operations: Including Guidance for Subsea Application and Prolonged Surface Application* developed by NRT member agency representatives in 2013 and focus on monitoring atypical use of dispersants during an oil discharge in order to provide data for operational response decision-making. Further details on the SMART protocols can be found in the *Field monitoring to support operational decisions* discussion in this preamble.

A commenter also requested clarification on the statement suggesting that subsurface dispersant application close to the release source reduces environmental impacts. They requested elaboration on the specifics of this statement in the context of the discussions of dispersant harm to aquatic organisms found in other places in the proposed rule. The commenter suggested elaborating on the language, or if there is inherent uncertainty, to allow RRTs to participate in research or testing associated with pre-authorization of dispersant use requests.

The proposed rule preamble at 80 FR 3394 states: “Equipment is being contemplated to inject dispersants subsurface, directly into the oil near the source of the discharge. This type of application is intended to minimize dispersant dilution in the water before the dispersant has had an opportunity to interact with the oil. This application approach that is closer to the source is expected to reduce potential adverse environmental consequences from the use of excessive quantities of dispersants. However, applying dispersant to an oil discharge does not result in the physical recovery of oil from the environment. Instead, dispersing oil increases the potential exposure of aquatic organisms to the dispersant-oil mixture, at least transiently, and subsurface application has the potential to more immediately and effectively increase these exposures near the discharge.” EPA disagrees with the commenter that clarification is needed on the cited statement, as the commenter had only cited a portion of the full statement. When taken in its full context, the statement is highlighting that this new subsurface dispersant application approach is intended to reduce the risk of using excessive quantities of dispersants. The full statement recognizes that dispersing oil does not remove it from the environment and that in some instances subsurface dispersant use has the potential to increase exposures near the discharge. The Agency recognizes the inherent uncertainties with a subsurface application approach, which is an integral part of the basis for the new monitoring requirements in this final action. For pre-authorization of dispersant use requests, the final action does not prevent the RRT from establishing additional criteria to address incident-specific concerns beyond those requirements in the final rule, or from establishing incident-specific criteria for those situations not covered in

the final rule. RRT authorities and responsibilities are set forth in the NCP and are outside the scope of this action.

Some commenters further advocated making all monitoring results and information publicly available; some commenters suggested daily reporting and public notification protocols and that results of dispersant monitoring performed during the Deepwater Horizon oil spill response be released to provide an example of the types of information that can be obtained from existing methods and technologies.

The final action includes requirements for the responsible party to provide reporting to the OSC, including daily reporting of the monitoring data results. EPA expects that daily reporting would be reflective of an operational schedule based upon a 24-hour time period. Further details of those requirements are found in the *Immediate Reporting* and *Daily Reporting* discussions in this preamble. Regarding public notification protocols, EPA notes that the OSC directs response efforts and coordinates all other efforts at the scene of a discharge, including public information and community relations. See 40 CFR 300.120. The NCP provides instruction to the OSC on ensuring all appropriate public and private interests are kept informed and that their concerns are considered throughout a response. See 40 CFR 300.155. The OSC public communications authorities under the NCP are outside the scope of this action. The Agency worked with Federal interagency partners in developing the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* guidance, which includes examples of the types of information that can be obtained from relevant methods and technologies, and which serves as a basis for this action. Additionally, while the Agency did incorporate lessons learned from dispersant use operations during the Deepwater Horizon oil spill into this final action, the new monitoring requirements are performance based and focused on information requirements. The Agency believes this approach provides the opportunity to consider relevant technologies and to capture advances in technologies.

A commenter expressed concerns over proposed language that seems to suggest that EPA views comprehensive and quantitative monitoring of dispersant effectiveness at sea as a feasible proposition. This commenter stated that currently, this type of monitoring is not technically possible and suggested that the word “comprehensive” be replaced with the word “adaptive” throughout this section. The commenter noted that this change would allow decisions related to dispersant use to be revisited as circumstances surrounding the release change.

The Agency disagrees that comprehensive and quantitative monitoring of dispersant effectiveness at sea is not currently technically possible. The requirements set forth in this action are informed by lessons learned during the Deepwater Horizon response and are consistent with the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* guidance. Further, the Agency disagrees that the narrative describing the monitoring requirements should replace the term “comprehensive” with the term “adaptive.” The commenter stated that describing the monitoring requirements as “adaptive” would allow decisions related to dispersant use to be revisited as circumstances surrounding the release change. The Agency disagrees that characterizing the specific regulatory provisions in this action as comprehensive would in any way preclude the OSC to adapt operational decisions based on the monitoring data. The Agency is describing the new monitoring requirements as comprehensive because they go beyond the initial dispersant application to also include the transport and environmental effects of the dispersant and dispersed oil in the water column.

A commenter requested that EPA provide additional supporting references for the proposed requirements. The commenter suggested that supporting references could include peer-reviewed articles published since 2012 that examine the use of dispersants during the Deepwater Horizon response or the 48 studies initiated by government agencies cited in a 2012 U.S. Government Accountability Office (GAO) report. They also suggested that reference be made to the 2011 Federal On-Scene Coordinator (FOSC) Deepwater Horizon Operational Science Advisory Team (OSAT) Report, which indicated that there were no identifiable harmful impacts

to any marine life following dispersant applications. The commenter requested that new monitoring requirements for the dispersant use situations applicable to this action be reconsidered in the context of recent scientific research. A commenter requested EPA review recent publications that suggest the effectiveness of dispersant use, citing results from monitoring and testing during the Deepwater Horizon oil spill response. Further, a commenter stated that the new monitoring requirements are unnecessary until EPA can provide published results indicating harm from dispersant use to the environment or public health. Similarly, a commenter stated that if there is no intention to include recent research in the proposed update, the new requirements should not be promulgated.

The Agency believes it has demonstrated the need for these new monitoring requirements to inform operational decision-making specific to atypical dispersant use. As already highlighted, the new requirements are consistent with the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* guidance, which addresses the dispersant use situations addressed by this action. Further, the Agency disagrees that recent scientific research would necessitate reconsidering the minimum set of monitoring requirements for the atypical dispersant use situations as specified in this action. EPA recognizes uncertainties still surrounding dispersant use, particularly for the atypical dispersant use situations contemplated since their use during the Deepwater Horizon oil spill. EPA continues to participate in scientific efforts with scientists and researchers from industry, academia, and public organizations, such as the multi-year State-of-the-Science for Dispersant Use in Arctic Waters effort sponsored by NOAA through the Coastal Response Research Center, which continue to identify unknowns and uncertainties relative to this response technology. EPA also continues to actively participate as a standing member of the Interagency Coordinating Committee on Oil Pollution Research (ICCOPR), a 15-member Interagency Committee established by Title VII of the Oil Pollution Act of 1990 (Section 7001). EPA's own research efforts and on-going engagement with the broader research community support the need for the new monitoring provisions established in this final action. Finally, the

Agency notes the commenter's request to recognize the 2011 Deepwater Horizon OSAT Report. The commenter did not specify which 2011 OSAT report. The February 10, 2011, OSAT report is a summary for fate and effects of remnant oil in the beach environment. The July 8, 2011, report is an ecotoxicity addendum entitled "*Summary Report for Sub-Sea and Sub-Surface Oil and Dispersant Detection: Ecotoxicity Addendum.*" EPA's understanding is that the OSAT reports focused on information to guide response actions and do not draw conclusions about long-term environmental impacts of the spilled oil. Specifically, the OSAT ecotoxicity addendum report states that its purpose was to provide the OSC with information on the remaining toxicity of released oil and dispersant to representative water column and sediment-dwelling organisms at the time the samples were collected and intended to inform the OSC regarding transition of nearshore activities from the emergency response phase to the long-term recovery and restoration phase. The new monitoring requirements promulgated in this action will serve to inform dispersant use decisions during a response by providing environmentally relevant data and information to the OSC and other Agencies with roles and responsibilities under the NCP where atypical dispersants are deployed. Under the NCP, the OSC directs the response consistent with provisions including 40 CFR 300.120, 40 CFR 300.150, and Subpart D, which includes threats to the public health.

The Agency acknowledges that scientific research continues regarding dispersant use in general and with respect to the Deepwater Horizon oil spill. The Agency disagrees with the commenter that the monitoring requirements should be removed because EPA did not include references that the commenter characterized as the numerous scientific, peer-reviewed publications published since May 2012 in the 2015 preamble that the commenter stated to have examined the dispersant use during DWH. The commenter did not provide a list of references or examples as illustrations, nor included those that may be relevant to the monitoring provisions. The Agency believes that the new monitoring requirements will provide information and data to inform future response decisions for atypical dispersant use situations reflective of the

Deepwater Horizon oil spill-type and other scenarios. Furthermore, these new monitoring requirements will provide information and data that address knowledge gaps identified in the 2012 GAO report, “*U.S. Government Accountability Office Report, Oil Dispersants, Additional Research Needed, Particularly on Subsurface and Arctic Applications*,” which commenters also referenced.

The Clean Water Act provides that the National Contingency Plan “shall include, but not be limited to, the following: ... (F) Procedures and techniques to be employed in identifying, containing, dispersing, and removing oil and hazardous substances. (G) A schedule, prepared in cooperation with the States, identifying – (i) dispersants, other chemicals, and other spill mitigating devices and substances, if any, that may be used in carrying out the [NCP], (ii) the waters in which such dispersants, other chemicals, and other spill mitigating device and substances may be used, and (iii) the quantities of such dispersant, other chemicals, or other spill mitigating device or substance which can be used safely in such waters....” In conjunction with the existing testing requirements, listing of agents, and authorization of use procedures, the promulgation of these new monitoring requirements provide data which can be used to inform the decision making of the OSC and of the other Agencies with roles and responsibilities under the NCP. The wide variability in waters, weather conditions, organisms living in the waters, and types of oil that might be discharged requires this combined approach.

A commenter expressed concerns that in the event of a spill these new monitoring requirements may hamper response activities from occurring in a timely manner. They recommended that effectiveness monitoring be conducted as a set of tabletop exercises first, to determine whether the monitoring protocols are feasible. This commenter also requested recognition for other analytical options such as in-situ analytical techniques.

The Agency disagrees with the premise that monitoring requirements could hamper response activities from occurring in a timely manner. The Agency notes the time frame for the deployment of subsurface dispersant injection equipment by vessels for offshore facilities is not

expected to be different than the time frame for deploying monitoring equipment. Monitoring requirements should not delay or impede response actions related to the deployment of mechanical recovery, in-situ burning, or dispersant-related equipment. The monitoring and data submissions that serve as the basis of this rule were established in the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* guidance document. The Agency is aware that industry and OSROs have been preparing for the requirements of this rule since the 2013 interagency signing of the NRT guidance document. This final action provides notice for a potential responsible party to identify and prepare for deployment of monitoring assets including identifying response personnel, equipment, and sampling materials. Potential responsible parties also have time to identify and plan for the need of alternative resources to account for events such as equipment failure, rather than wait until an incident occurs. The Agency encourages the continuation of planning and preparedness efforts and continues to support these efforts with our interagency partners.

A commenter indicated that monitoring of dispersants in the coastal zone should be under the authority of the United States Coast Guard (USCG). This commenter suggested that the RRT and OSC should have decision-making authority as indicated in NRT's *Environmental Monitoring for Atypical Dispersant Operations* and the SMART document. Another commenter stated that this section of the proposed rule should be consistent with, and pose no conflict to, the NRT guidance found in the 2013 *Environmental Monitoring for Atypical Dispersant Operations* document.

The Agency recognizes OSC roles, responsibilities and authorities as described in the NCP, including USCG OSC roles and responsibilities in the coastal zone as described in 40 CFR 300.120 and §300.140. EPA has responsibilities under Subpart J of the NCP that apply to the use of chemical agents in the coastal and inland zones, including an authorization of use role as provided in 40 CFR 300.910 (states and other federal agencies also have responsibilities under this provision). The Agency acknowledges that the atypical dispersant use situations subject to



the new monitoring requirements will likely be overseen by a USCG OSC. The President has delegated EPA the authority under CWA 311(d) to revise or otherwise amend the NCP and to establish requirements for dispersants, other chemicals, and other spill mitigating devices and substances, which are found in Subpart J of the NCP. The Agency has structured the amendments to Subpart J of the NCP to include not only the testing and listing protocols, and the authorization of use procedures, but also the monitoring provisions to ensure agents are being used appropriately. The new monitoring requirements are consistent with existing RRT and OSC authorities and responsibilities under the NCP. Finally, the requirements set forth in this action are informed by lessons learned during the Deepwater Horizon oil spill and are consistent with the 2013 *NRT Environmental Monitoring for Atypical Dispersant Operations* guidance.

The Agency acknowledges the recommendation to renumber the monitoring section but is not making this change because the numerical order of the provisions has no practical effect on the regulatory requirements.

## 2. Roles and responsibilities for monitoring operations

Several commenters expressed concern specific to the requirements for the responsible party to monitor the use of dispersants under the direction of the OSC. A commenter stated that the responsible party should not oversee monitoring for impacts related to the spill for which they are responsible. Similarly, other commenters suggested the OSC select a qualified third party to be responsible for monitoring and water column testing processes during the response instead of the responsible party. Further, the commenters stated that the third party should be required to disclose any relationship with the responsible party to avoid potential conflicts of interest and suggested that the OSC oversee transparency in the monitoring and water quality testing processes. Commenters suggested that this third-party monitor should be acceptable to the OSC, EPA, Department of Interior (DOI) RRT representatives (potentially including DOC RRTs), as well as the responsible party. A commenter also suggested that because the QAPP will include DOI trust resources, it should be submitted and approved by DOI RRT representatives

and the OSC. Commenters also suggest adding a timeline for submission and approval of the QAPP documentation.

EPA recognizes commenters' concerns regarding the responsible party conducting dispersant monitoring due to inherent conflicts of interest. The Agency notes that under the NCP the OSC coordinates, directs and reviews the work of the responsible party. See, e.g., 40 CFR 300.120. The Agency believes the responsible party must be prepared for and provide resources to gather data and information to inform decisions regarding dispersant use operations. The approach to this final action is consistent with the NCP response framework, taking advantage of the knowledge and geographic proximity of the responsible party as applicable, and allowing for the effective allocation of limited governmental resources. Additionally, the new monitoring requirements in this final action do not, for example, preclude the OSC from seeking a qualified third party to conduct additional monitoring or testing, from requiring the responsible party to use a third party to conduct the monitoring or testing where the OSC deems it appropriate, or from seeking supplemental data and information separately. Similarly, the final rule does not preclude the consideration of third-party testing or test results.

The Agency notes that the NCP already provides for the natural resource trustees' roles relative to dispersant use. Further, this final rule does not amend any regulatory requirements or authorities, including EPA-delegated authorities under Subpart J, or regarding the OSC role to direct public and private spill response efforts, the Area Committee responsibilities for developing Area Contingency Plans, or the responsible party's obligations for preparing Facility or Vessel Response Plans, as applicable. The NCP establishes the Regional Response Teams and their roles and responsibilities in the National Response System, including coordinating preparedness, planning, and response at the regional level. Nothing in this final action precludes OSC consideration of local interests and knowledge for effective allocation of resources, nor interferes with NCP established roles and responsibilities for response actions. The DMQAPP developed by the responsible party will be submitted to the OSC to provide context and allow for

better understanding of monitoring data and information. The OSC has not only the expertise of the SSC available to assist with the data collected following the DMQAPP, it also has available within the existing NCP authorities the expertise of the respective state (as applicable), DOI RRT representatives and other pertinent agencies. The NCP designates the RRT as the appropriate regional mechanism for coordination of assistance and advice to the OSC during such response actions. As specified in the final regulatory text, the responsible party must submit a DMQAPP to the OSC covering the collection of environmental data within this section as part of implementing the monitoring requirements. The Agency again encourages planning and preparedness efforts and continues to support these efforts with our interagency partners.

A commenter suggested that although the proposed rule requires the responsible party to conduct monitoring, these operations would be completed under the direction of the OSC. The commenter indicated that the NCP provides for a three-tiered approach, including the Federal government directing all public and private spill response efforts for certain types of spill events; Area Committees developing detailed, location-specific Area Contingency Plans; and vessel and certain facility owners and operators preparing Facility Response Plans. The commenter suggested that this type of tiered approach allows for Federal oversight without dismissing local interests and knowledge and enables the efficient allocation of limited resources for response actions.

The Agency agrees that the USCG OSC generally oversees the responsible party during coastal zone response operations, which includes implementation of the new monitoring requirements. The new monitoring requirements fall within the existing NCP framework of federal government oversight through the OSC. The NCP serves as the federal government's blueprint for responding to oil discharges or threats of discharge, ensuring national response capabilities and promoting coordination among the hierarchy of responders and contingency plans. The approach to this final action is consistent with the NCP response framework, taking advantage of the knowledge and geographic proximity of the responsible party as applicable, and

allowing for the effective allocation of limited governmental resources. These new provisions of minimal monitoring requirements under Subpart J for specific atypical dispersant use situations are consistent with the existing NCP authorities and objectives.

A commenter suggested that monitoring be required as directed by the OSC. The commenter suggested that every response is unique in terms of the type of spill and appropriate actions, and therefore, discretion should be given to the OSC to determine monitoring requirements. This commenter indicated that any monitoring requirements should be consistent with the phased approach to monitoring that is discussed in the SMART protocols. The commenter also pointed out that USCG Strike Teams have monitoring requirements and asked EPA for clarification related to the reasoning behind changing the existing monitoring process and oversight structure.

The Agency agrees discretion needs to be afforded to the OSC to account for incident-specific circumstances in a response. This action specifies that the new monitoring requirements are to be implemented by the responsible party. The Agency notes that under the NCP the OSC has an established oversight role over the responsible party; the OSC continues to have authority to direct additional monitoring and data collection beyond that which is specified in the new requirements. This may include local field efficacy testing prior to dispersant use to better understand and account for site specific conditions in operational decision-making. While the SMART protocols may be utilized not only in pre-deployment field testing but also as part of the overall response, the atypical uses of dispersant during a response that are addressed in this action were neither envisioned nor addressed in the existing SMART monitoring program. The requirements in this final action follow recommendations from the *Environmental Monitoring for Atypical Dispersant Operations* developed by NRT member agency representatives in 2013. The 2013 NRT guidance focuses on monitoring atypical use of dispersants during an oil discharge in order to provide data that will inform decision-making for dispersant use operations

in a response. Further discussion on SMART protocols can be found in the *Field monitoring to support operational decisions* discussion in this preamble.

The Agency recognizes OSC roles, responsibilities, and authorities as described in the NCP, including USCG OSC roles and responsibilities in the coastal zone as described in 40 CFR 300.120 and 300.140, with additional clarification provided in previous Federal Register notices (e.g., 59 FR 47389). EPA has responsibilities under Subpart J of the NCP that apply to the use of chemical agents in both the coastal and inland zones, including an authorization of use role as provided in 40 CFR 300.910 (states and other federal agencies also have responsibilities under this provision). The Agency acknowledges that the atypical dispersant use situations subject to the new monitoring requirements will likely be overseen by a USCG OSC. The President has delegated EPA the authority under CWA 311(d) to revise or otherwise amend the NCP and to establish requirements for dispersants and other chemicals, and other spill mitigating devices and substances, which are found in Subpart J of the NCP. The Agency has structured the amendments to Subpart J of the NCP to include the testing and listing protocols, the authorization of use procedures, and the monitoring provisions to ensure agents are being used appropriately. The new monitoring requirements are consistent with existing RRT and OSC authorities and responsibilities under the NCP. Finally, EPA is unaware of any regulatory requirements issued by the USCG Strike Teams regarding dispersant use monitoring.

### 3. *Field monitoring to support operational decisions*

Several commenters expressed concerns that the proposal does not effectively justify the additional monitoring requirements. These commenters believe the additional monitoring requirements could cause delays in response actions, preclude dispersant use, and result in additional environmental damages. Some commenters expressed concerns that the proposed rule may hinder timely response operations, as opposed to improve real-time decision-making. They suggested the monitoring requirements should be designed by the OSC to fit the needs of the given environment.

The Agency disagrees with the premise that monitoring requirements could hamper response activities from occurring in a timely manner. The Agency notes the time frame for the deployment of subsurface dispersant injection equipment by vessels for offshore facilities is not expected to be different than the time frame for deploying monitoring equipment. The Agency reiterates the new monitoring provisions do not change current preparedness or planning regulatory requirements; the monitoring and data submissions that serve as the basis of this rule were established in the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* document. The Agency is also aware that industry and OSROs have been preparing for the requirements of this rule since the 2013 interagency signing of the referenced NRT guidance document. This final action provides notice for a potential responsible party to identify and prepare for deployment of monitoring assets including identifying response personnel, equipment, and sampling materials. Potential responsible parties also have time to identify and plan for the need of alternative resources to account for events such as equipment failure, rather than wait until an incident occurs. The Agency encourages the continuation of planning and preparedness efforts and continues to support these efforts with our interagency partners. Additionally, monitoring requirements should not delay or impede response actions related to the deployment of mechanical recovery, in-situ burning, or dispersant-related equipment.

Other commenters added that the proposed requirements deviate significantly from existing monitoring regimes from the NRT in its *Environmental Monitoring for Atypical Dispersant Operations*, which the commenters characterized as advocating for the adaptation of the SMART monitoring regimen. Some commenters requested that EPA adjust the language to require SMART Tier I efficacy monitoring for the first use of dispersants, followed by environmental impact monitoring no later than 96 hours after the first application.

Some commenters also suggested that the proposed rule goes beyond what is required by the NRDA. These commenters also stated that the new requirements appear to focus on the environmental effects of dispersant use rather than the health and safety of response workers.

One commenter asked EPA to clarify that the primary objective of characterizing the efficacy of response agents is to protect response personnel health and safety. The commenters also suggested the OSC employ the Net Environmental Benefits Analysis (NEBA) structure to assess the overall benefits of dispersant use. Another commenter expressed concern about this type of monitoring informing response decision-making. Other commenters requested that EPA clarify between short-term monitoring result that must be disseminated extremely quickly and those that are part of a more comprehensive longer-term monitoring process.

The new monitoring section is modeled after the 2013 NRT guidance document, *Environmental Monitoring for Atypical Dispersant Operations*, developed following the Deepwater Horizon oil spill and tailored to monitoring atypical dispersant use situations. These NRT guidelines specified that atypical use of dispersants during a response are not addressed in the existing SMART monitoring program. In addition to the criteria outlined in the NRT guidelines, the Agency included applicability criteria for the new monitoring requirements for situations where the surface use of dispersants is authorized in response to oil discharges of more than 100,000 U.S. gallons occurring within a 24-hour period. The Agency chose 100,000 U.S. gallons as a threshold criterion based on the NCP classification of major discharges to coastal waters. EPA combined this 100,000 U.S. gallons major discharge criterion with a 24-hour time frame, considering that a larger quantity of dispersant may be required in a short time frame for an incident of this scale. The applicability criteria in the final rule are consistent with the NRT *Environmental Monitoring for Atypical Dispersant Operations* guidelines.

As noted in the proposed rule, the goal of establishing a Schedule under the NCP is to protect the environment from potential damage related to spill mitigating products used in response to oil discharges. This goal is consistent with past preambles related to Subpart J. For example, the 1994 NCP final rule (59 FR 47407) noted, "...EPA believes that Congress' primary intent in regulating products under the NCP Product Schedule is to protect the environment from possible deleterious effects caused by the application or use of these products. In looking at the

long- and short-term effects on the environment of all spill mitigating devices and substances, EPA has concluded that chemical and bioremediation countermeasures pose the greatest threat for causing deleterious effects on the environment.” While EPA recognizes that worker health and safety are integral to any oil spill response, provisions for these specific concerns are found under 40 CFR 300.150 of the NCP and are outside the scope of this action.

EPA disagrees with commenters that the new provisions should require SMART Tier I efficacy monitoring for the first use of dispersants, followed by environmental impact monitoring no later than 96 hours after the first application. While EPA recognizes the application of SMART Tier I protocols for evaluating initial dispersant efficacy, these protocols are based on aerial visual assessments by trained observers or advanced remote sensing instruments flying over the oil slick. To help evaluate visual assessments, NOAA developed a Dispersant Application Observer Job Aid, which is a field guide for trained observers to promote consistency in identification of dispersed and undispersed oil, describing oil characteristics, and reporting this information to decision-makers. The SMART protocols recognize that visual observations do not always provide confirmation that the oil is dispersed, and that dispersant operations effectiveness can be difficult to determine by visual observation alone.

The SMART protocols do not monitor the fate, effects, or impacts of dispersed oil. The monitoring of atypical dispersant use necessitates specific considerations beyond those addressed by SMART. The 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* recognizes such atypical uses of dispersant during a response are not addressed in the existing SMART monitoring program. Further, the SMART protocols do not apply to any subsurface dispersant application. EPA is unaware of any similar NRT-approved protocols or NOAA-developed job aids related to subsurface dispersant application. The new monitoring requirements in this final action are intended to supplement, not to replace, the SMART protocols. The new requirements recognize that SMART monitoring protocols are expected to have already been deployed in atypical dispersant use situations. While some monitoring



requirements are included in the SMART Tier III protocol (e.g., turbidity, pH, Conductivity, Temperature), other requirements important to the understanding of dispersant effectiveness (e.g., in situ droplet size distribution) are not.

A commenter noted that this action may be an opportunity to broaden the proposed requirements to cover all response approaches. Other commenters also suggested the RRT should have the ability to require field testing of a given approach prior to response action approval. A commenter expressed that this type of monitoring does inform response decision-making; the commenter requested that EPA clarify between short-term monitoring results that must be disseminated extremely quickly and those that are part of a more comprehensive longer-term monitoring process.

While this action specifically addresses certain atypical dispersant use operations, the Agency notes the OSC continues to have authority to direct additional monitoring and data collection beyond that which is set forth in the new monitoring requirements. Under the NCP, the OSC has the authority to direct monitoring and data collection for any and all approaches utilized during a response. This may include field efficacy testing prior to dispersant use to better understand and account for site-specific conditions in operational decision-making. RRT authorities and responsibilities are set forth in the NCP and are outside the scope of this action. However, for pre-authorization of dispersant use requests, the Agency notes that this final action does not prevent a RRT from establishing additional criteria to address incident-specific concerns beyond those requirements in the final rule, or from establishing incident-specific criteria for those situations not covered in the final rule.

Dispersants are not the only option for oil spill response, as other mitigation options are available that may lower the potential overall environmental damage. Decisions to use dispersants and other chemical agents used during a response are to be made in accordance with Subpart J of the NCP and all applicable statutes. Any environmental tradeoff methodologies for

oil spill responses where dispersants and other chemical agents are considered must be in conformance with the statutory and regulatory authorities that govern their use.

*4. Criteria for triggering monitoring requirements*

EPA received comments specific to the proposed thresholds or applicability criteria for triggering the monitoring requirements. A commenter indicated that although they agree with EPA's proposal to include thresholds above which monitoring requirements would apply, they suggested that the spill rate and volume be reduced. The commenter recommended that the trigger applicability volume threshold for monitoring be set to a discharge of more than 50,000 U.S. gallons within 24 hours and surface use of dispersants for more than 48 hours. Another recommended a lower release threshold of 21,000 gallons (500 barrels), and any dispersant use lasting more than 24 hours. In contrast, other commenters requested further clarification, and yet others a more relaxed set of thresholds for comprehensive monitoring. A commenter suggested that the proposed release volume of 100,000 gallons be relaxed, stating there are other factors to consider that influence spill outcomes beyond the spill volume. Commenters also expressed concern regarding the 96-hour duration threshold requirement for dispersant use and suggested that especially for earlier life stages near the surface, a 96-hour exposure has the potential for adverse effects. Citing the information above, a commenter proposed a 24-hour threshold for comprehensive monitoring instead of 96 hours. Finally, a commenter asked for clarification on the requirements for monitoring of dispersants use when the spill volume is less than 100,000 gallons in the first 24 hours or for dispersant use occurring over a period of less than 96 hours.

The Agency received support for establishing monitoring requirements, with commenters also offering opposing perspectives on the applicability thresholds that would trigger these requirements. The Agency agrees with the concept of monitoring the use of all chemical agents during a response; however, the monitoring requirements in this action apply specifically to certain atypical dispersant use situations. The Agency acknowledges some commenters' support for the new monitoring requirements applying to any subsurface dispersant use in a response.

The Agency considered the alternative threshold and applicability criteria some commenters offered for atypical surface dispersant uses: 50,000 or 21,000 U.S. gallons within a 24-hour period and surface use of dispersants for more than 48 or 24 hours. Another commenter suggested that any enhanced monitoring beyond that required in the SMART protocols should commence within seven days. However, EPA disagrees with revising the proposed applicability thresholds for surface dispersant use, including those commenters who requested a more relaxed set of thresholds for the proposed discharge volume of 100,000 U.S. gallons.

While modeled after the 2013 NRT guidance, the Agency included the additional applicability criterion for the new monitoring requirements for situations where the surface use of dispersants is authorized in response to oil discharges of more than 100,000 U.S. gallons occurring within a 24-hour period. The Agency chose 100,000 U.S. gallons as a threshold criterion based on the NCP classification of major discharges to coastal waters. EPA combined this 100,000 U.S. gallons major discharge criterion with a 24-hour time frame, considering that a larger quantity of dispersant may be required in a short time frame for an incident of this scale. The Agency believes the potential variability in response actions for an incident of this magnitude, including consideration of the time needed for deployment, merits this scenario being included as a trigger for applicability of the new monitoring requirement.

The Agency recognizes that especially for earlier life stages near the surface, a longer exposure time frame has the potential for adverse effects. The 96-hour time frame in this action is based on 96 hours being a common exposure duration used in toxicological studies of dispersants. While recognizing that the 24- and 48-hour time frames may also be used in toxicological studies, the Agency's intent in proposing these specific monitoring requirements was to have them apply to atypical spill situations with the potential for larger amounts of dispersants being used. The Agency also disagrees with relaxing the time frame for the new requirements to begin monitoring within seven days, as the upper limit of that time frame would be outside what the NRT has recognized as an atypical surface dispersant use situation. The

Agency continues to believe that the applicability thresholds for both the quantities and durations for surface dispersant use as proposed serve to capture the potential for the broader ecosystem impacts resulting from the larger spills that are the focus of the new monitoring requirements. Finally, the applicability criteria in the final rule are consistent with NRT *Environmental Monitoring for Atypical Dispersant Operations* guidelines.

A commenter indicated that the phrase “upon initiation and for the duration of subsurface dispersant use” can be misconstrued to mean that monitoring should be conducted at all times. They suggested that monitoring requirements be determined by the OSC given the potential variability in response actions. This would allow the OSC to determine the best timing for operational monitoring deployment. This commenter also stated that the volume and duration criteria for monitoring should be replaced with a single criterion that “any enhanced monitoring beyond SMART shall commence within seven days.” According to the commenter, this ensures that the best experts can be mobilized to respond to the spill, monitoring vessels can be located and mobilized, sampling strategies can be developed, and appropriate safety considerations can be reviewed.

EPA proposed new monitoring requirements for the responsible party to implement when any subsurface and certain surface dispersant use conditions are met: “When these dispersant use conditions are met, and for the duration of dispersant operations, the responsible party shall...”. EPA disagrees that the phrase can be misconstrued when taken within the context of the new monitoring requirements because it is qualified with the statement: “When these dispersant use conditions are met...”. Further, the new minimum set of requirements for the specified atypical dispersant use conditions fall within the construct of the NCP and do not prevent the OSC to further consider the potential variability for any given response action. Additionally, the responsible party is required to submit a DMQAPP to the OSC, in which some of the incident-specific considerations to implementing monitoring operations can be addressed while still

meeting the regulatory provisions. Thus, the Agency disagrees that the new provisions may not offer enough flexibility to allow for an appropriate level of monitoring.

As stated before, the final rule provides notification for a responsible party to identify and prepare for potential deployment of monitoring assets prior to the incident. Monitoring assets for a responsible party to identify and prepare for include response personnel, equipment, sampling materials, and alternative resources to account for equipment failure. The Agency also considered the steps taken for the deployment of subsurface dispersant injection equipment, including their associated time frames. The Agency does not believe deploying monitoring equipment should take longer than the deployment of subsurface dispersant injection equipment. Replacing the applicability criteria with a single criterion that “any enhanced monitoring beyond SMART shall commence within seven days” would result in subsurface dispersant application without any subsurface monitoring in place or surface monitoring beyond the intended applicability of SMART.

Some commenters were against having thresholds or applicability criteria for triggering the monitoring requirements and suggested that EPA should require comprehensive monitoring in all instances of dispersant or any other product use, regardless of the spill volume or duration, especially in Arctic waters. Some commenters asserted that this type of comprehensive monitoring would better capture acute effects on aquatic organisms. Other asserted comprehensive monitoring is important as it may represent the only opportunity to test the efficacy of these agents in a field or “real world” setting.

The Agency recognizes that there may be other factors to consider that influence spill outcomes beyond the spill volume. Further, surface dispersant use situations outside those specifically covered by the applicability criteria established in this final rule may also have adverse impacts. Thus, there is value in conducting operational monitoring for all instances of dispersant or any other chemical agent use, regardless of the spill volume, duration, or affected ecosystem. The new monitoring requirements in this action do not preclude an OSC from

directing the responsible party to adopt similar procedures for dispersant use situations not covered by the established applicability criteria. This action does not impact the OSC authority to direct any monitoring necessary to evaluate dispersant efficacy and address potential toxicity concerns on aquatic organisms specific to the response, including in remote settings such as Arctic waters.

A commenter suggested the use of SMART Tier I monitoring protocols for all surface dispersant use and monitoring of long-term effects of dispersant use specific to a particular incident. Another suggested that efficacy monitoring should follow the SMART Tier I, Tier II, and Tier III protocols. Some commenters also suggested that monitoring information can be used to verify planning assumptions and also to support seafood safety decisions and NRDA activities. A commenter suggested the proposed rule may not offer enough flexibility to allow for an appropriate level of monitoring and requested that EPA revise the requirements to allow for OSC and RRT assessments of monitoring needs at each site instead of on a discharge volume basis.

The Agency disagrees with extending these new specific requirements to all instances of dispersant use. However, it agrees in part with commenters that dispersant use should be monitored and that monitoring of discharges not meeting the thresholds for these atypical monitoring requirements should, at a minimum, follow the NRT-approved SMART Tier I, Tier II, and Tier III protocols. EPA notes that RRTs typically include SMART monitoring as an essential element in their authorization of use review which is implemented during a response. EPA disagrees with commenters who stated that all surface dispersant use should use the SMART Tier I protocol. While EPA recognizes the value of the SMART Tier I protocol in evaluating initial dispersant efficacy, it is based on aerial visual assessments by trained observers or advanced remote sensing instruments flying over the oil slick. To help evaluate visual assessments, NOAA developed a Dispersant Application Observer Job Aid, which is a field guide for trained observers to promote consistency in identification of dispersed and undispersed

oil, describing oil characteristics, and reporting this information to decision-makers. The SMART Tier I protocol recognizes visual observations do not always provide confirmation that the oil is dispersed, and that dispersant operations effectiveness can be difficult to determine by visual observation alone. The SMART protocols do not monitor the fate, effects, or impacts of dispersed oil.

The monitoring of atypical dispersant use necessitates specific considerations beyond those addressed by the SMART protocols. The new monitoring section in this rule is modeled after the 2013 NRT guidance document *Environmental Monitoring for Atypical Dispersant Operations*, developed following the Deepwater Horizon oil spill and specifically tailored to the type of atypical dispersant use situations covered by these new requirements. The 2013 NRT guidelines specify that atypical uses of dispersants during a response are not addressed in the existing SMART monitoring protocols. Again, the SMART protocols do not apply to subsurface dispersant applications. EPA is unaware of any similar NRT-approved protocols or NOAA-developed job aids related to subsurface dispersant application. The new monitoring requirements in this final action are intended to supplement, and not to replace, the SMART protocols. The new requirements take into account that the SMART monitoring activities are expected to have already been deployed in atypical dispersant use situations. While some monitoring requirements are included in the SMART Tier III protocol (e.g., turbidity, pH, Conductivity, Temperature), other requirements (e.g., in-situ droplet size distribution) that are important to the understanding of dispersant effectiveness are not.

With respect to a commenter who recommended monitoring of long-term effects of dispersant use specific to a particular incident, the Agency agrees that potential long-term effects of dispersant use should be considered during dispersant use decision-making. However, monitoring the long-term effects of dispersant use specific to a particular incident is part of the NRDA process. Again, these new monitoring requirements are intended to inform operational decision-making specific to atypical dispersant use and not intended to be part of the NRDA. The

broader NRDA data gathering efforts may apply to dispersant operations or other parts of the response.

Some commenters stated that the efficacy of dispersants in Arctic waters is poorly understood and until additional scientific data is available, monitoring following any dispersant use should be required. A commenter suggested that in addition to the monitoring requirements, EPA should establish thresholds for the maximum dispersant application volumes over time, after which dispersants use should be ceased. Another suggested that all dispersant use should be curtailed until there is a more robust understanding of the toxic effects of these types of chemicals. Another commenter suggested that EPA should require site-specific testing and monitoring of products to determine efficacy prior to, during, and after response actions.

The Agency disagrees with the comments that the new monitoring requirements should include thresholds for maximum dispersant application volumes over time, after which dispersants use should be ceased. Establishing dispersant use volumes depends not only on incident-specific factors, but also on many site-specific factors (e.g., local hydrodynamic conditions, species sensitivities), making this suggested approach overly restrictive. However, the Agency shares the commenters' concerns regarding the impact of atypical use of dispersants on the affected environments. The decision not to establish maximum dispersant application volumes over time, as part of these new monitoring requirements, should not be interpreted to mean that the Agency supports unlimited dispersant use. When responding under the NCP, decisions on dispersants and other chemical agents used are to be made in accordance with the authorization of use procedures in 40 CFR 300.910 of Subpart J. The provisions under Subpart J are driven by the statutory requirement to develop a schedule (see CWA 311(d)(2)(G)) that identifies the waters and quantities in which dispersants and other chemical agents may be safely used in such waters. The OSC is to make dispersant use determinations for each response based on all relevant circumstances and in accordance with existing authorization of use procedures under Subpart J of the NCP. The data and information resulting from the new monitoring



requirements promulgated in this action will serve to inform dispersant use decisions during a response by the OSC and other Agencies with roles and responsibilities under the NCP where atypical dispersants are deployed. The new monitoring provisions, when taken together with the existing testing requirements, listing of agents, and authorization of use procedures under Subpart J address the types of waters and the quantities of listed agents that may be used safely in such waters in a response. The wide variability in waters, weather conditions, organisms living in the waters, and types of oil that might be discharged requires this approach. Any environmental tradeoff methodologies applied to dispersant use decisions must be in conformance with the statutory and regulatory authorities that govern the dispersant use.

The Agency continues to engage with the research community to incorporate advances in scientific understandings of dispersant use into existing policies. Curtailing all dispersant use until every aspect of dispersant efficacy and toxicity is studied would be impracticable and overly restrictive. However, EPA agrees an important aspect of dispersant use decision-making is documenting information and associated uncertainties of dispersant efficacy and toxicity specific to the conditions and geographical location where they are intended for use. The final monitoring requirements direct the responsible party to document the dispersant used and the rationale for dispersant choice(s), including the results of any efficacy and toxicity tests.

Documentation of any additional efficacy and toxicity testing results, data or information specific to the area or site conditions, and associated uncertainties will assist the OSC and RRT(s) in choosing the appropriate dispersant use approach. The listing of a specific dispersant (i.e., dispersant product) on the NCP Product Schedule is not a rationale to use a dispersant in any given situation. Further, the listing of a specific dispersant on the NCP Product Schedule does not mean that EPA approves, recommends, licenses, certifies, or authorizes its use on an oil discharge. The listing means only that the required data have been submitted to EPA as required by Subpart J of the National Contingency Plan, 40 CFR 300.915.

Finally, EPA agrees with commenters who requested the new monitoring requirements also include site-specific baseline monitoring prior to application of dispersant and is amending the final rule to reflect this change. The Agency believes this a rational and necessary addition since an understanding of baseline conditions is required for understanding the effects of dispersants in a specific area. The Agency believes that baseline monitoring will provide pre- and post- dispersant application data to better evaluate the effects, including physical dispersion, of the dispersants. Further discussion on this change to the proposed requirements is found in *Water Column Sampling* discussion in this preamble.

#### 5. Surface vs. Subsurface Monitoring

A commenter suggested that EPA distinguish between surface and subsurface monitoring in the first paragraph of the proposed rule. They also suggested that the OSC should authorize dispersant use and evaluate the need for monitoring actions. The commenter suggested the proposed updates seem to inappropriately replace the three-tiered SMART protocols which this commenter indicated should be implemented for surface dispersant use using USCG resources. They also requested that the rule specify that the responsible party monitor subsurface dispersant injections. They also asked that the monitoring requirement updates not impede response actions or dispersant use and should be implemented only after there are available resources during a response. Regarding subsurface monitoring, the commenter also proposed that EPA use the documentation in the published *Industry Recommended Subsea Dispersant Monitoring Plan – Version 1.0* as their basis for subsurface monitoring protocols. Similarly, a commenter requested a restructuring of the proposed rule to provide separate guidance for surface and subsurface dispersant use.

The Agency believes the monitoring section is clear relative to the requirements for the subsurface and surface monitoring and that dividing the monitoring section into separate subsections would be duplicative and unnecessary. However, the final rule does identify specific requirements relative to surface versus subsurface applicability. This preamble provides

additional context to the intent of the regulatory requirements for surface and subsurface monitoring.

EPA notes that dispersant authorization of use is governed by a separate section of Subpart J (40 CFR 300.910) and is outside the scope of the new monitoring requirements for atypical dispersant use in this final action. The monitoring section of the final rule provides a minimum set of requirements the Agency believes are necessary for monitoring the use of dispersants in those situations covered by the applicability criteria.

The Agency disagrees that the proposed updates inappropriately replace the three-tiered SMART protocols, which the commenter indicated should be implemented for surface dispersant use using USCG resources. According to the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations*, atypical uses of dispersant during a response were not addressed in the existing SMART monitoring program. The SMART protocols do not apply to subsurface dispersant application, and the monitoring requirements for surface application are intended to supplement, not replace, the SMART protocols.

EPA disagrees that surface dispersant monitoring should be implemented using USCG resources to meet these regulatory requirements. The provisions of dispersant monitoring are appropriately the responsibility of the regulated community. USCG resources are intended to provide support in excess of commercially available resources. The SMART protocols do not limit surface dispersant monitoring to only USCG resources. The availability of government resources is not assured and does not satisfy the regulatory standard or intent of this rulemaking. Finally, while the OSC may choose to implement separate monitoring activities, the new monitoring requirements in this final rule are for the responsible party to implement and not directed towards any government agency or resources.

EPA does not believe the monitoring requirement will in any way impede response actions or dispersant use and disagrees that monitoring requirements should be implemented only after there are available resources during a response. The Agency also notes steps taken for the

deployment of subsurface dispersant injection equipment, including their associated time frames. The Agency does not believe deploying monitoring equipment should occur on a time frame that is longer than the deployment of subsurface dispersant injection equipment. As observed elsewhere in this preamble, the new monitoring provisions do not change current preparedness or planning regulatory requirements; the monitoring and data submissions that serve as the basis of this rule were established in the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* document. The Agency believes that both industry and oil spill response organizations (OSROs) are aware of the NRT guidance document referenced immediately above and have since been preparing for monitoring requirements described in this rule. This final action provides notice to potential responsible parties of the expectation to identify and prepare for deployment of monitoring assets, to obtain data and information required during those discharge situations subject to this action, including response personnel, equipment, and sampling materials. This final action also allows potential responsible parties time to identify and have strategies in place to provide alternative resources for eventualities such as equipment failure, rather than wait until an incident occurs. The Agency encourages planning and preparedness efforts and supports these efforts with our interagency partners.

#### ***B. Information on Dispersant Application***

In the new monitoring regulations, the responsible party is required to document: 1) the characteristics of the source oil; 2) the best estimate of the oil discharge volume or flow rate, periodically reevaluated as conditions dictate, including a description of the method, associated uncertainties, and materials; 3) the dispersant used, rationale for dispersant choice(s) including the results of any efficacy and toxicity tests specific to area or site conditions, recommended dispersant-to-oil ratio (DOR); and 4) the application method(s) and procedures, including a description of the equipment to be used, hourly application rates, capacities, and total amount of dispersant. For subsurface discharges, the responsible party must also document the best estimate of the discharge flow rate of any associated volatile petroleum hydrocarbons, periodically

reevaluated as conditions dictate, including a description of the method, associated uncertainties, and materials. Methods and materials are commonly used terminology in the technical and scientific community, explaining the procedures and equipment used to obtain the results. The description should allow the reader to understand how the data was obtained and to reconstruct the methodology to get similar results.

As addressed in the preamble, the new monitoring requirements in this final action do not, for example, preclude the OSC from seeking a qualified third party to conduct additional monitoring or testing, from requiring the responsible party to use a third party to conduct the monitoring or testing where the OSC deems it appropriate, or from seeking supplemental information separately. Similarly, the final rule does not preclude the consideration of third-party testing or test results.

A commenter expressed concern regarding the reliance on potentially responsible parties for spill characterization including estimates of blowout flow rates and spill volumes as the basis for dispersant application volumes. A commenter suggested that the responsible party should be required to disclose all information used in determining estimates of flow rates and spill volumes. Another commenter recommended that any estimates of spill volumes or blowout rates should be independently derived and not under the purview of the potential responsible party. This commenter also indicated concern that the rule seems to only contain reference to blowout-type releases and argued that all potential types and sources of spills should be included in the updates to the rule. The commenter also stated that other parameters (e.g., oil viscosity, emulsification, dispersant formulation, dose rate, mixing energy, water salinity, and potential for dilution) should be included in the dispersant application decision-making process.

The Agency understands the concerns regarding the reliance on responsible parties for spill characterization, including estimates of blowout flow rates and spill volumes as the basis for dispersant application volumes. EPA is specifying “volume” since the monitoring requirements also apply to certain near instantaneous discharges where “flow rate” is not as applicable (e.g.,

catastrophic tank vessel casualty). However, the new monitoring requirements do not preclude the OSC from seeking non-responsible party evaluations, including independent government agencies or academia, for spill characterization including estimates of discharge flow rates and volumes.

The new provisions require the responsible party to document the characteristics of the source oil and provide the best estimate of the oil discharge flow rate, periodically reevaluated as conditions dictate, including a description of the method, associated uncertainties, and materials. EPA agrees that the responsible party should disclose to the OSC all relevant information used in determining estimates of flow rates and spill volumes. This will provide the OSC with the necessary information for operational decision-making and coordination of the dispersant application monitoring.

The Agency agrees that other parameters (e.g., oil viscosity) may inform the dispersant decision-making process, including dispersant application. For example, oil viscosity is an important parameter in characterizing the source oil and in conducting trajectory modeling as described in the *Oil Distribution Analyses* discussion in this preamble. The Agency believes these parameters are already inherently captured in the monitoring section, including the *Dispersant Application* and *Oil Distribution Analyses* discussions in this preamble, and therefore it is unnecessary to specifically list additional parameters.

A commenter stated that the responsible party should not be required to provide documentation at the onset of a response if the documentation was previously provided in the preparedness or planning stages. The commenter suggested removing this section from the proposed rule. They stated that if a dispersant or other agent is on the Schedule, then by definition it is a viable response option. This commenter also stated that if the section is not removed, it should be amended to say hourly application rates are to be provided for subsurface dispersant applications only. They indicated that an hourly application rate would not apply to aerial or vessel types of application which are measured on the basis of spray assets, application

speed, and spray system swath widths. This commenter also recommended that the section discussing the DOR be edited to indicate that the ratio may need to be changed from the initial recommended ratio in response to site-specific environmental conditions or the weathering condition of the oil.

EPA disagrees that the responsible party should not be required to provide documentation at the onset of a response if the documentation was previously provided in the preparedness or planning stages and also disagrees with the suggestion that the section addressing such be removed from the proposed rule. The Agency also disagrees that listing of a dispersant or other agent on the Schedule defines it as a viable response option for any given response.

Requiring the responsible party to provide documentation ensures that information is directly provided to the OSC and is relevant to the incident-specific discharge situation and also avoids any potential delays in information gathering. The Agency calls attention to existing regulatory requirements clearly establishing that being listed on the NCP Product Schedule is not itself a rationale or authorization to use that dispersant in any given situation, but rather that the product is available for consideration as a response option, as appropriate. 40 CFR 300.920. The listing of a specific dispersant on the NCP Product Schedule does not mean that EPA approves, recommends, licenses, certifies, or authorizes the use of that dispersant on an oil discharge. The listing means only that data have been submitted to EPA as required by Subpart J of the National Contingency Plan, 40 CFR 300.915.

The Agency disagrees that the final rule should require hourly application rates be provided only for subsurface dispersant applications. Even if aerial or vessel types of application are measured based on spray assets, application speed, and spray system swath widths, the responsible party can calculate the volume of dispersant applied during the time in which it is applied. Certain American Society for Testing and Materials (ASTM) Standards (e.g., ASTM F1737/F1737M-19 Standard Guide for Use of Oil Spill Dispersant Application Equipment During Spill Response: Boom and Nozzle Systems; ASTM F1413/F1413M-18 Standard Guide

for Oil Spill Dispersant Application Equipment: Boom and Nozzle Systems) may include procedures to assist in determining dispersant application rates. Furthermore, EPA clarified in the regulatory text that the daily reporting requirements for the actual amount of dispersant used is intended for each dispersant application platform.

EPA does not believe that the DOR should be qualified as “initial” to account for site-specific environmental conditions or the weathering condition of the oil. To the extent that the responsible party believes the DOR should be changed from the initial recommendation, they may request a change and should provide supporting documentation justifying the change for consideration by the OSC and RRT, as appropriate.

A commenter also suggested that EPA should remove the requirement for measuring volatile petroleum hydrocarbons. They indicated these types of measurements are very difficult to obtain and fluctuate due to shifts in wind speed and direction or changes in sun exposure. They also argued that EPA should use already existing best practices for dispersant monitoring such as the American Petroleum Institute (API) guidelines on subsurface dispersant monitoring, API TR 1152. The commenter proposed specific language for this change.

The Agency disagrees with the suggestion to remove the requirement for measuring volatile petroleum hydrocarbons. EPA recognizes the concern that these types of measurements may be difficult to obtain and may fluctuate due to shifts in wind speed and direction or changes in sun exposure for air sampling. However, these factors should not adversely affect measurements of these petroleum constituents in the water column as the result of a discharge where the subsurface application of dispersant may occur.

The Agency disagrees with replacing “...collection of all environmental data.” with “...collection of operational monitoring data.” However for clarity, the Agency has replaced “...collection of all environmental data.” with “... collection of environmental data within this section.” The monitoring requirements focus on collecting environmental data to support dispersant use decision-making in response operations, and not on overall operational monitoring



to evaluate how well other response options (e.g., in-situ burning) may mitigate the negative effects of the oil discharge on sensitive environmental resources. The Agency recognizes an overall response strategy may incorporate operation monitoring to evaluate reducing the overall impact of an oil discharge and may include response options that are outside the scope of the dispersant monitoring section. However, the monitoring section in the final rule focuses on the environmental monitoring related to dispersant use. In addition, dispersants are not the only response option; there are other response options (e.g., mechanical recovery) available that may lower overall environmental damage. Decisions on use of dispersants and other agents during a response are to be made in accordance with the NCP and the governing statute(s). Environmental tradeoff methodologies where dispersants are considered must be in conformance with the statutory and regulatory authorities that govern dispersant use when considering the extent to which they can be used.

As noted in the proposed rule, the goal of establishing a Schedule under the NCP is to protect the environment from possible damage related to spill mitigating products used in response to oil discharges. This goal is consistent with past preambles related to Subpart J. For example, the 1994 NCP final rule (59 FR 47407) noted, "...EPA believes that Congress' primary intent in regulating products under the NCP Product Schedule is to protect the environment from possible deleterious effects caused by the application or use of these products. In looking at the long- and short-term effects on the environment of all spill mitigating devices and substances, EPA has concluded that chemical and bioremediation countermeasures pose the greatest threat for causing deleterious effects on the environment."

A commenter indicated that they do not support the proposed provisions and expressed concerns regarding the role of the responsible party in dispersant operations and product selection. The commenter suggested that all dispersant-related activities and product selections be primarily advised by the NOAA SSC through the OSC and RRT with operational support from the responsible party. Similarly, a commenter requested that EPA clarify that the OSC, and

not the responsible party, has final authority regarding the dispersant application practices. The commenter also suggested that new technologies such as open-cell elastomeric foams be used in conjunction with dispersants to mitigate environmental damage.

EPA recognizes the concern regarding the role of the responsible party in dispersant operations and product selection. However, the NCP establishes the OSC's authority to direct response efforts, including overseeing dispersant use and monitoring in accordance with Subpart J of the NCP. See, e.g., 40 CFR 300.120. Also, SSCs may provide scientific support for operational decisions and coordinate on-scene scientific activity during a response, as described in the NCP under 40 CFR 300.145(c). The use of other response mitigation technologies is outside the scope of this final action.

### ***C. Water Column Sampling***

#### ***1. Background and Baseline Sampling***

The final action requires the responsible party to collect a representative set of ambient background water column samples in areas not affected by the discharge of oil, at the closest safe distance from the discharge as determined by the OSC, and in the directions of likely oil transport considering surface and subsurface currents. The responsible party is also required to collect a representative set of baseline water column samples at such depths and locations affected by the discharge of oil absent dispersant application, considering surface and subsurface currents, oil properties, and discharge conditions. This collection of background and baseline water column samples is to follow standard operating and quality assurance procedures. These representative sets must be analyzed for the following variables: 1) in-situ oil droplet size distribution, including mass or volume mean diameter for droplet sizes ranging from 2.5 to 2,000  $\mu\text{m}$ , with the majority of data collected between the 2.5 and 100  $\mu\text{m}$  size; 2) in-situ fluorometry and fluorescence signatures targeted to the type of oil discharged and referenced against the source oil; 3) dissolved oxygen (DO) (subsurface only); 4) total petroleum hydrocarbons, individual resolvable constituents including volatile organic compounds (VOC), aliphatic

hydrocarbons, monocyclic, polycyclic, and other aromatic hydrocarbons including alkylated homologs, and hopane and sterane biomarker compounds; 5) methane, if present (subsurface only); 6) heavy metals, including nickel and vanadium; 7) turbidity; 8) water temperature; 9) pH; and 10) conductivity.

A commenter expressed support for the proposed background sampling requirements. Another commenter expressed support for the proposed updates and suggested that the sampling also include background areas to better delineate the plume. That commenter stated that the sample collection and analysis should be paired with aerial and strobe imagery to more effectively assess the plume area. Another commenter also suggested the use of the “Dispersed Oil Monitoring Plan” developed by California Office of Spill Prevention and Response (OSPR), which provides an approach for water column sampling. Another commenter supported the proposed monitoring requirements but suggested they include establishing baseline conditions prior to product application. Another commenter suggested that EPA add an exception clause to the proposed rule which would require responsible parties to document why some or all sample collection requirements were not feasible during a given incident response.

The Agency agrees with the commenter’s suggestion to include background water sampling and has included such requirements in the final rule. The Agency believes this a rational and necessary addition since an understanding of background conditions is required for understanding the incremental effects of dispersants. Ambient background sampling characterizes relevant ambient water conditions unaffected by the discharged oil, serves to check instrument performance, and informs dispersed oil plume behavior and delineating plume boundaries. The Agency recognizes imagery technology may assist in more effectively assessing the plume area when paired with water sampling. The final rule requires that the responsible party consider available technologies to characterize dispersant effectiveness and oil distribution, which may include imagery technology. The Agency believes the specific approach suggested

for water column sampling as outlined in the “Dispersed Oil Monitoring Plan” developed by OSPR is consistent with the approach established in these monitoring provisions.

EPA agrees with commenters who requested the new monitoring requirements also include site-specific baseline monitoring of the oil discharge in the absence of dispersant application and is including such requirement in the final rule. The Agency believes that baseline monitoring will provide data absent dispersant application to evaluate physical dispersion relative to the effects of dispersant use. The baseline requirement is intended to consider the currents and oil characteristics, as well as other relevant discharge conditions such as the discharge configuration or multiple discharge locations. The Agency also included similar clarifying language for the water column sampling in the dispersed oil plume provision.

Conducting baseline monitoring absent dispersant application reduces potential uncertainties associated with dispersant effectiveness in the field and supports dispersant use decision-making in response operations. For subsurface dispersant application, this means initiating monitoring immediately prior to dispersant application to avoid disrupting dispersant application once it is initiated. The Agency does not believe that collection of baseline monitoring data immediately prior to subsurface dispersant application will delay response actions. Equipment for subsurface dispersant injection typically takes days to be deployed by vessels for offshore facilities and become operationally ready. Thus, there is an opportunity to also deploy monitoring equipment, prior to or concurrent with that of subsurface dispersant injection equipment, without delaying subsurface dispersant application. Of note, EPA is not requiring 24-hour analyses be conducted and results be provided before dispersant application may begin; only that samples be collected. The Agency notes again that the new monitoring provisions do not change current preparedness or planning regulatory requirements; the monitoring and data submissions that serve as the basis of this rule were established in the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* document. Further, the Agency believes that industry and OSROs have been preparing for the requirements of this rule since the 2013 issuance of the NRT guidance

document, and notes API issued its own guidelines in 2013 on subsurface dispersant monitoring (API TR 1152). This final action provides notice for a potential responsible party to identify and prepare for deployment of monitoring assets including identifying response personnel, equipment, and sampling materials. Potential responsible parties also have time to identify and plan for the need of alternative resources to account for events such as equipment failure, rather than wait until an incident occurs. The Agency, along with our interagency partners, continues to support and encourage these planning and preparedness efforts.

The Agency recognizes that for certain atypical oil discharge situations where surface dispersants have been authorized, dispersant application may already be underway (e.g., surface dispersant use prior to the 96-hour after initial application threshold) or capable of being applied by aircraft prior to dispersant monitoring vessels being deployed (e.g., for surface dispersant application for oil discharges greater than 100,000 U.S. gallons within a 24-hour period). The final rule is not intended to impede surface dispersant application until vessels are deployed to begin baseline monitoring prior to the first dispersant application, nor to stop such operations once they have been authorized. However, EPA also understands that deployment of monitoring assets should begin before the 96-hour after initial application threshold is reached so as not to delay monitoring operations. Likewise, the initial application of authorized surface dispersant use by aircraft should not be delayed until surface monitoring assets are deployed. The Agency believes surface dispersant monitoring should be operational as soon as possible to allow for baseline monitoring because of its ability to inform the response efforts and is to be operational in accordance with the new monitoring requirements where the discharge meets the 96-hour after initial application threshold. To address concerns raised by commenters and avoid any misinterpretation that initial surface dispersant use by aircraft would be delayed, the Agency is clarifying the regulatory text, and specifically that for the monitoring requirements for any surface dispersant use in response to oil discharges of more than 100,000 U.S. gallons occurring within a 24-hour period. The Agency is specifying that when any dispersant is used on the

surface in response to oil discharges of greater than 100,000 U.S. gallons occurring within a 24-hour period, the responsible party shall implement paragraphs (a) through (g) of this section as soon as possible for the entire or remaining duration of surface dispersant use, as applicable.

Finally, the Agency recognizes the differences in subsurface versus surface dispersant application relative to discharge location. Dispersant application in the subsurface generally occurs close to the oil discharge location, while surface dispersant application to oil patches may at times occur further away from the oil discharge location. Multiple oil patches provide multiple opportunities to monitor surface dispersant application activities, including baseline monitoring. EPA is not suggesting that every oil patch in which dispersant is applied must be monitored, but that the responsible party implement a sampling strategy where representative oil patches are monitored for baseline data and for the duration of dispersant operations.

EPA disagrees with the commenter who suggested the addition of an exception clause, which would require responsible parties to document why some or all sample collection requirements were not feasible during a given incident response. The commenter did not identify why some or all sample collection requirements would not be feasible. The Agency believes that such an exception would be overly broad. The responsible party is required to follow established standard operating and quality assurance procedures when collecting water column samples.

Some commenters expressed general agreement with the need for monitoring but said that the proposed requirements add unnecessary analytical parameters and that such requirements may actually delay response actions. A commenter also stated that monitoring should be incident specific and be under the responsibility of the OSC and responsible party.

The Agency disagrees that the proposed requirements add unnecessary analytical parameters and that such requirements may actually delay response actions. Each oil discharge represents a unique situation with distinct conditions which may require various response methods. When dispersants are applied to an oil discharge, field monitoring can be used to inform operational decisions by gathering site-specific information on the overall effectiveness,

including the transport and environmental effects of the dispersant and the dispersed oil. The Agency disagrees that the monitoring requirements for dispersant use are limited in scope to evaluating the initial effectiveness of the dispersant application. The Agency is requiring that sample collection follow established standard operating and quality assurance procedures that are reliable and defensible. Elements of monitoring plans are generally described in various guidance documents on standard operating and quality assurance procedures for environmental sampling.

The Agency disagrees with the premise that monitoring requirements could hamper response activities from occurring in a timely manner. Specifically, the monitoring requirements are not designed to delay or impede response actions related to the deployment of mechanical recovery, in-situ burning, or dispersant-related equipment. The Agency also notes the time frame for deployment of subsurface dispersant injection equipment by vessels for offshore facilities is not expected to be different than the deployment of subsurface dispersant injection equipment. The final rule provides notification for a responsible party to identify and prepare for potential deployment of monitoring assets prior to an incident. These assets may include response personnel, equipment, and sampling materials, as well as alternative resources and procedures to account for events such as equipment failure. Comments regarding the OSC's roles and responsibilities are addressed in *Roles and Responsibilities for Monitoring Operations* discussion in this preamble.

A commenter stated that elements of 3-D and 4-D modelling should be included to broaden the overall understanding of subsurface conditions. The Agency acknowledges the modeling suggestion and addresses trajectory modeling in the *Oil Distribution Analyses* discussion in this preamble. The same commenter recommended updates to the proposed rule language droplet size distribution analysis; however, the Agency believes that the commenter intended for the droplet size to be in micrometers ( $\mu\text{m}$ ) instead of picometers (pm) in its recommended rule language because for the purpose of measuring dispersed oil, droplet size is

typically reported in micrometer units.

Some commenters indicated that water sampling requirements are more appropriate for the NRDA process. The Agency disagrees that the water sampling requirements in this final action are more appropriate for the NRDA process and believes that comprehensive monitoring for discharge situations subject to this action is necessary to determine the overall effectiveness of dispersants and should extend beyond the initial dispersant application to include the transport and environmental effects of the dispersant and dispersed oil in the water column. Furthermore, the Agency notes that the SMART Tier III protocol also includes water sampling.

Another commenter supported the proposed monitoring requirement and suggested that EPA require sampling and analysis of VOCs, semi-volatile compounds, and the full suite of metals and metalloids. This commenter also recommended the use of specific sampling devices. This final action requires water column samples in the dispersed oil plume to be analyzed for total petroleum hydrocarbons, which includes VOCs and semi-volatile compounds. Additionally, the commenter is not clear about which metals and metalloids to analyze for and which analytical methods to use. The Agency is requiring water samples be analyzed for heavy metals, including nickel and vanadium, which are typically found in crude petroleum oil. EPA does not specify sample collection methods or devices in the water column sampling requirements. The Agency is requiring that sample collection follow established standard operating and quality assurance procedures that are reliable and defensible; standard operating procedures should describe the appropriateness of the sampling method, including the equipment needed for sample collection.

A commenter indicated support specifically for daily water column sampling in the dispersed plume. This commenter also suggested that EPA develop protocols for surface and subsurface current tracking. EPA acknowledges a commenter's support specifically for daily water column sampling in the dispersed plume. EPA does not believe it is appropriate to develop protocols for surface and subsurface current tracking because the Agency believes these issues



are best addressed in a DMQAPP. The final rule requires that the responsible party consider available technologies to characterize dispersant effectiveness and oil distribution.

A commenter expressed support for the proposed monitoring requirements but suggested that EPA provide minimum required monitoring guidance. Such guidance might include timing, sample frequency, number of samples, spatial locations, and sampling depths. This commenter also had questions regarding thresholds for each of the proposed monitoring parameters that would require a cessation of adjustment in response actions. For example, they questioned whether there is a threshold lower value for pH or DO in the water column, at which point responders would shift response actions until the parameter values were within the acceptable range. The commenter suggested that these thresholds should be established for each sampled parameter. Due to the potential for dispersants to enhance bioavailability to aquatic organisms, the commenter also requested that bioaccumulation of Total Petroleum Hydrocarbons (TPH) and heavy metals in benthic biota be added to the monitoring requirements along with characterization of these components in the sediment. They also indicated that Ultraviolet (UV) radiation monitoring could enhance plume characterization as these data are inexpensive to collect and are useful for understanding the oil weathering state.

The Agency acknowledges the commenter's suggestions regarding monitoring guidance for timing, sample frequency, number of samples, spatial locations, and sampling depths. The Agency believes that the final rule provides flexibility to develop monitoring strategies that can be tailored to an incident-specific dispersant use situation. Because these situations may vary, the Agency did not establish specific parameters for sample frequency, number of samples, spatial locations, and sampling depths other than what has been provided in the final rule. However, the monitoring approach should include periodic sampling of previously sampled locations including near the discharge source to evaluate changes in parameters over time at those locations.

Additionally, EPA did not propose to establish monitoring thresholds in the monitoring section and the establishment of thresholds is out of scope for these final monitoring provisions.

EPA recognizes the commenter's concern regarding monitoring in benthic biota, sediment characterization, and UV radiation monitoring. The final action does not prevent the OSC or appropriate RRT agencies from requiring additional monitoring parameters, which may include benthic biota monitoring, sediment characterization, or UV radiation monitoring. The final rule requires that the responsible party consider available technologies to characterize the dispersant effectiveness and oil distribution to determine changes in the condition of the oil due to weathering.

A commenter suggested that incorporating API TR1152 (*Industry Recommended Subsea Dispersant Monitoring Plan*, Version 1.0, API Technical Report 1152, September 2013) by reference would meet the requirements of the subsection. The Agency disagrees that the monitoring requirements need to incorporate by reference API TR1152 or that adherence to it meets the requirements of the subsection. For example, API TR1152 presents a phased approach which allows subsurface dispersant injection to commence after implementing limited visual confirmation and air monitoring. The Agency disagrees that such an approach is appropriate for the atypical situations expected to trigger applicability of these requirements, particularly for subsurface dispersant application. While SMART protocols include visual observation for surface dispersant use, air monitoring is used for in-situ burning situations. In addition, the SMART protocols are not applicable to subsurface dispersant application. The expectation is that for those atypical dispersant use situations, the expanded monitoring provisions put forth in this action are necessary to effectively inform dispersant use. As previously discussed in this preamble, the requirements set forth in this action are informed by lessons learned during the Deepwater Horizon oil spill and are consistent with the 2013 NRT *Environmental Monitoring for Atypical Dispersant Operations* guidance document.

## 2. Dispersed Oil Plume Daily Sampling

The new provisions require the responsible party to collect daily water column samples in the dispersed oil plume, following standard operating and quality assurance procedures, at such

depths and locations where dispersed oil is likely to be present. This daily sampling must include the following variables: 1) in-situ oil droplet size distribution, including mass or volume mean diameter for droplet sizes ranging from 2.5 to 2,000  $\mu\text{m}$ , with the majority of data collected between the 2.5 and 100  $\mu\text{m}$  size; 2) in-situ fluorometry and fluorescence signatures targeted to the type of oil discharged and referenced against the source oil; 3) dissolved oxygen (DO) (subsurface only); 4) total petroleum hydrocarbons, individual resolvable constituents including volatile organic compounds, aliphatic hydrocarbons, monocyclic, polycyclic, and other aromatic hydrocarbons including alkylated homologs, and hopane and sterane biomarker compounds; 5) methane, if present (subsurface only); 6) heavy metals, including nickel and vanadium; 7) turbidity; 8) water temperature; 9) pH; and 10) conductivity. Several commenters indicated support for the water column sampling section of this final rule and agreed that these provisions will add value during a response.

### 3. Water Column Samples Analyses

The responsible party must collect ambient background, baseline, and dispersed oil plume water column samples following standard operating and quality assurance procedures. The water column samples are to be analyzed, as applicable, for: droplet size distribution; fluorometry and fluorescence; dissolved oxygen; total petroleum hydrocarbons; methane; heavy metals; turbidity; water temperature; pH; and conductivity. The Agency is not including the proposed requirement to analyze for carbon dioxide in this final action. The specific provisions are as follows:

*i. In-situ oil droplet size distribution analysis, including the mass or volume mean diameters between droplet sizes ranging from 2.5 to 2000  $\mu\text{m}$ , with the majority of data collected between the 2.5 and 100  $\mu\text{m}$  sizes.*

A commenter requested additional descriptions of the methodology for determining droplet size. They expressed concern that while techniques such as Laser In-situ Scattering and Transmissometry (LISST) can measure droplet size, there needs to be a process for confirming

that the particles are dispersed oil versus other types of suspended particles. They suggested the concurrent use of fluorometers to help differentiate oil droplets from other particles. Another commenter similarly suggested that EPA clarify that droplet measurement methods should include fluorometers or similar instrumentation. This commenter also stated that the use of fluorometry could aid in confirming the measurement of actual oil droplets as opposed to other particles in the water column.

A commenter discussed concerns related to the feasibility of in-situ droplet size measurements. They indicated that LISST has a droplet size detection limit of around 500  $\mu\text{m}$ , well below the upper limit of the proposed range of 2.5-2000  $\mu\text{m}$ . They also stated that there is currently no commercially available droplet measurement instrumentation that is operational in deep water to size ranges up to 2000  $\mu\text{m}$ . They indicated that if this instrumentation did become available in the future, it would likely require remotely operated vehicles (ROV) or additional vessel support, which would be impossible to deploy without interfering with response activities. This commenter recommended that EPA allow for alternative methods for measuring droplet size including high definition, high speed photography, or sonar as these technologies mature.

A commenter indicated strong support for the proposed updates to this section of the proposed rule, stating that droplet size measurement is critical for response actions. Similarly, a commenter stated that they agreed with EPA that the collection of droplet size distributions will add valuable information during response actions.

The Agency is not requiring the use of specific oil size droplet measurement methods or instrumentation. Further, the Agency is not requiring the use of single instrument, methodology, vessel, or ROV be used to collect the required information. How to collect the information is left for the responsible party to determine and document in the DMQAPP. The Agency is requiring that droplet size information be collected because oil droplet sizes generally decrease with dispersant addition and because oil droplets below 100  $\mu\text{m}$  generally remain entrained into the water column, relative to larger particles that may eventually resurface over time. Furthermore,

collecting oil droplet sizes of a broader range informs trajectory modeling used to predict the fate and transport of dispersed oil and to inform sampling locations. This final rule requires that sample collection follow established standard operating and quality assurance procedures that are reliable and defensible; standard operating procedures should include the equipment needed for sample collection. The Agency agrees with the concurrent use of fluorometers to help differentiate oil droplets from other particles. The final rule includes fluorometry as part of the water sampling requirements. The Agency does not designate specific methods or devices in this final rule, including methods for measuring droplet size such as high definition, high speed photography, or sonar.

*ii. In-situ fluorometry and fluorescence signatures targeted to the type of oil discharged and referenced against the source oil.*

A commenter indicated that the proposed fluorometry measurements are redundant and less informative than the droplet size measurements. They suggested that collection of these measurements be optional and handled on a case-by-case basis. This commenter also requested that EPA substantiate the need to replace the existing SMART protocols, which provide similar monitoring approaches including the use of simple fluorometry in the SMART Tier II protocol.

Another commenter suggested additional resources for planning and conducting sample collection and monitoring in the field. They indicated that the use of SMART Tier III fluorometry tows could facilitate the collection of before and after treatment samples from outside and inside the slick area.

Other commenters expressed support for the proposed fluorometry measurements, but requested clarification related to the use of in-situ fluorometry in the response context. These commenters suggested that EPA clarify that oil weathering and dispersion can impact the fluorescence of oil components. These commenters also indicated that site-specific calibration may be necessary in response to changing turbidity or particle size distribution. A commenter suggested that EPA should make it clear that without measurement of fluorescence signatures

(fluorescence measures across multiple wavelengths), most commonly used in-situ fluorometers only provide an approximate indication of oil in the water column. These commenters requested that EPA clarify that these methods cannot distinguish oil signals, and added that most dispersants fluoresce as well, potentially adding to difficulties interpreting in-situ fluorescence measurements.

The Agency agrees that collection of samples from outside and inside the slick area prior to and after dispersant application serves to inform the initial effectiveness of surface dispersant application. SMART Tier II and III protocols similarly note three primary target locations: 1) ambient background water (no oil); 2) oiled surface slicks prior to dispersant application, and 3) post-application, after the oil has been treated with dispersants. EPA emphasizes that these water column sampling requirements are not replacing the SMART protocols and that EPA assumes the SMART Tier III protocol is also being implemented as part of the response. EPA is requiring that sample collection under the new monitoring requirements follow established standard operating and quality assurance procedures.

The Agency disagrees that fluorometry is a redundant measurement. For crude petroleum oils, the aromatic fraction is responsible for the fluorescence property of petroleum. Instruments that measure particle size, such as the LISST, do not distinguish between oil droplets and other types of particles in the same size range. Fluorometers can be targeted to the type of oil discharged and the excitation and emission wavelengths chosen should match the aromatic properties of the oil discharged. Fluorescence is a valuable screening tool deployed during a response, providing a rapid indication of potential dispersed oil in the water column, as well as an indicator of dispersion effectiveness. The final rule requires the responsible party to conduct a fluorescence intensity analyses on water samples collected to determine fluorescence signatures of the dispersed oil. To the extent the commenter believes that most dispersants fluoresce, potentially adding to the difficulty interpreting in-situ fluorescence measurements, the Agency expects this concern will be addressed in the DMQAPP.

*iii. Dissolved oxygen (DO) (subsurface only).*

A commenter indicated support for the collection of DO samples and agreed with the proposed approach of using the Winkler titration method to verify sample results. A commenter requested that the proposed rule be updated to require DO measurements using the best available devices. They also indicated that measurement verification using Winkler titration is impractical and outdated. They recommended instead that verification be conducted by the use of consistent sensor cleaning procedures, calibration tests, and redundant sensors which can be compared. In an effort to avoid slowing the process and information flow, they recommended that verification should only be required on a fraction of collected samples instead of for every sample.

The Agency recognizes that relying solely on measurements from in-situ oxygen instruments may lead to an erroneous interpretation of oxygen data. While the Agency does not require Winkler titration as confirmatory analysis in the final rule, the Agency believes that ex-situ DO measurements should generally be conducted using Winkler titrations to confirm in-situ DO measurements and notes that the OSC can require DO measurements be conducted using Winkler titrations if necessary. The Agency disagrees that measuring DO using Winkler titrations is impractical and outdated. For example, the use of Winkler titrations to measure dissolved oxygen provides for accurate measurements in subsurface waters where DO may already be low. Additionally, the final rule does not state the number of samples required for DO verification because this and the confirmatory analysis methodology should be addressed in the DMQAPP to ensure that DO measurements follow established standard operating and quality assurance procedures that are reliable and defensible.

The Agency agrees with commenters' concerns regarding tailoring DO measurements. DO is an important variable to monitor in the application of dispersants, particularly in subsurface waters that may inform operational decisions. For surface dispersant application, DO is expected to be higher in the mixed layer in the surface water. Because DO is expected to be higher in the mixed layer of the surface water, the Agency is not finalizing the proposed DO

requirements for surface dispersant application. However, the Agency strongly recommends RRTs and OSCs, as part of their authorized activities under the NCP, consider adding DO as a monitoring requirement for surface dispersant application in surface waters where DO is believed to be limited.

*iv. Total Petroleum Hydrocarbons, individual resolvable constituents, including volatile organic compounds, aliphatic hydrocarbons, monocyclic, polycyclic, and other aromatic hydrocarbons, including alkylated homologs, and hopane and sterane biomarker compounds.*

A commenter expressed support for the proposed requirements to analyze TPHs, individual resolvable constituents, including volatile petroleum hydrocarbons and branched/normal aliphatic hydrocarbons. A commenter also indicated support for the requirements to analyze monocyclic, polycyclic, and other aromatic hydrocarbons, including their alkylated homologs and hopane/sterane biomarker compounds. They suggested that results from these analyses can inform forensic assessment of collected samples. A commenter suggested that EPA should specify a standard analytical method for performing these analyses (from the multiple methods available) for water column samples. A commenter indicated that, as discussed by EPA, measurement of TPH alone is inadequate when attempting to assess the fate and effects of dispersed oil during a response. A commenter also communicated support for the proposed rule, adding that identifying concentrations of oil and associated components, as opposed to only the presence or absence of oil, is critical.

A commenter suggested that EPA adopt quick-screening methods for sampling TPHs by means of a hand-held gas chromatograph flame ionization detector (GC-FID). They indicated that detailed analysis for these components will not inform response decision-making and should instead be completed as part of the NRDA process. This commenter also suggested that the analytical requirements should apply to a fraction of the collected samples as opposed to every water sample.



EPA did not propose to use only TPH measurements to assess the fate and effects of dispersed oil, but rather included it along with other monitoring approaches in the final rule to assess the fate and effects of dispersed oil. The Agency is not specifying the type of analytical equipment or methods needed for sample collection. The Agency believes that standard operating procedures should describe the appropriateness of the sampling method and should be included in the DMQAPP.

The Agency disagrees that the detailed analysis of oil constituents is more appropriate for the NRDA process, and believes that comprehensive monitoring in certain discharge situations is necessary to determine the overall effectiveness of dispersants and should extend beyond the initial dispersant application to include the transport and environmental effects of the dispersant and dispersed oil in the water column. The final rule requires that sample collection follow established standard operating and quality assurance procedures that are reliable and defensible. Additionally, the final rule does not state the number of water samples required for analysis because this is to be determined on a case-by-case basis.

*v. Methane, if present (subsurface only).*

A commenter responded to this section of the proposed rule which requires the measurement of methane in water column samples during response activities. This commenter stated that monitoring of methane is unnecessary because it is linked to potential oxygen depletion, and therefore, is sufficiently covered with the monitoring requirements for DO.

The Agency agrees that methane biodegradation may lead to oxygen depletion but disagrees that it is sufficiently covered by the monitoring requirements for DO. Depletion of DO may be caused by other factors such as the biodegradation of lower molecular weight alkanes. Should DO depletion occur, understanding the correlation of potential substrates to DO is an important factor relative to the effects of dispersant use and may inform response decision-making.

*vi. Heavy metals analysis, including nickel and vanadium.*

Some commenters expressed support for the proposed updates. They agreed that heavy metals should be analyzed in monitoring samples, including nickel and vanadium concentrations. A commenter expressed concern that the analysis of heavy metals in water column samples does not have any relevance to monitoring of dispersed oil and does little to inform response decision-making. The commenter indicated they see no operational reasoning behind the collection of these data and suggested that the requirement for heavy metal analyses would lead to unnecessary delays and costs during response efforts.

The Agency disagrees that the analyses of heavy metals in water column has no relevance to monitoring of dispersed oil and does little to inform response decision-making. Crude petroleum oil may contain heavy metals, including nickel and vanadium<sup>22</sup>. The December 17, 2010 OSAT report entitled “Summary Report for Sub-Sea and Sub-Surface Oil and Dispersant Detection: Sampling and Monitoring” specifically included nickel and vanadium as part of the water sampling analyses. Furthermore, EPA specifies that dispersant products must be analyzed for arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, plus any other metals that may be reasonably expected to be in the product sample as part of the NCP product listing requirements under 40 CFR 300.915(a)(11)(i). Dispersing oil may increase the bioavailability of those heavy metals to marine organisms. In addition, monitoring heavy metals serves to inform water quality standards and thus is an important parameter to include in the monitoring requirements. The Agency does not expect these monitoring requirements to lead to delays given the flexibility provided under the new daily reporting provisions. Furthermore, the Agency disagrees with the characterization that these analyses lead to unnecessary costs for the reasons stated above in this paragraph and elsewhere in this Response to Comments document that address the appropriateness of this final action.

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<sup>22</sup> Walters, C. (2021). Petroleum. In Kirk-Othmer Encyclopedia of Chemical Technology, (Ed.). <https://doi.org/10.1002/0471238961.1518090702011811.a01.pub3>

*vii. Turbidity.*

Commenters indicated support for the proposed turbidity measurement requirement. A commenter stated that turbidity measurements are useful for determining the potential for dispersants and other products to act as sinking agents. The commenter suggested that in cases where turbidity may cause treated oil to sink, the use of dispersants or other treating agents should be prohibited.

A commenter who also indicated support for the proposed requirements for the collection of turbidity data agreed with EPA regarding concerns about the potential for agents to enhance the formation of oil-mineral aggregates (OMA) and marine oil snow (MOS) in the water column, putting benthic ecosystems at risk.

The Agency acknowledges commenters' support for the turbidity requirement. Turbidity is a general measure of water clarity and is measured by how much the amount of material suspended in water decreases the passage of light through the water. Suspended materials may include soil particles (clay, silt, and sand), algae, plankton, microbes, and other substances. Turbidity measurements provide a relatively quick assessment of suspended materials in the water bodies and are useful in determining the presence of materials that could interfere with oil particle size measurements. Finally, turbidity is included as a monitoring parameter in the SMART Tier III protocol.

The Agency notes that prohibition of the use of chemical agents is not addressed in this final action. Furthermore, dispersants are not sinking agents because they are not intended to sink the oil to the bottom of a water body and are defined separately from sinking agents in the NCP. However, the Agency recognizes concerns regarding the potential for dispersed oil as one pathway to contribute to Marine Oil Snow Sedimentation and Flocculent Accumulation (MOSSFA) in the water column that could potentially lead to settling. This final action does not prevent the OSC or RRTs, as part of their authorized activities under the NCP, from requiring additional monitoring parameters, which may include benthic biota monitoring, sediment

characterization, and other physical measurements of solids in the water (e.g., total suspended solids).

*viii. Water temperature, pH, and Conductivity.*

The Agency received no comments specific to these provisions and is finalizing the requirements as proposed.

*ix. Carbon Dioxide (CO<sub>2</sub>) - Removed.*

A commenter responded to the section of the proposed rule which requires the measurement of CO<sub>2</sub> in water column samples during response activities. This commenter indicated that the proposed rule is unclear in term of the benefits that CO<sub>2</sub> monitoring provides that are not already provided by DO monitoring. They also expressed concern that there is a limit to the number of sensors that can be deployed from a vessel during a response. The commenter stated that adding CO<sub>2</sub> to the analysis suite complicates the deployment of these instrument arrays.

The Agency notes that the aerobic biodegradation of oil constituents not only consumes DO but would also produce CO<sub>2</sub>. Increases in the CO<sub>2</sub> concentration that coincide with decreases in the DO concentration would provide credible evidence that biodegradation of oil is occurring. The Agency proposed measuring the in-situ CO<sub>2</sub> for subsurface dispersant applications because the Agency believed it would be a good indicator of microbial oxidation and inform the OSC on potential fate. However, the Agency agrees that adding CO<sub>2</sub> sensors may not always be practicable and that the other monitoring requirements indirectly inform potential biodegradation. Therefore, the Agency is not finalizing this proposed requirement at this time. The RRTs and OSCs, as part of their authorized activities under the NCP, may still consider adding CO<sub>2</sub> measurements and other biodegradation characterization assessments on a case-by-case basis.

***D. Oil Distribution Analyses***

The new provisions include requirements for the responsible party to characterize the

dispersant effectiveness and oil distribution, including trajectory analysis. As the OSC's oversight role over the responsible party is already established in the NCP, the Agency has removed the phrase "in consultation with the OSC" for §300.913(c) the oil distribution analysis. This characterization is to consider available technologies, account for the condition of oil, dispersant, and dispersed oil components from the discharge location, and describe any associated uncertainties.

Several commenters supported EPA's proposed language for §300.913(c). A commenter supported this section but commented that the regulation should recognize the limitations of oil distribution analyses in areas that lack good ocean current predictive models or observational data. Another commenter expressed strong support for efforts to elucidate dispersant effectiveness but noted that effectiveness monitoring should be used only when it does not impede response operations. Another commenter stated that EPA should acknowledge that the available methods for anticipating the movement of dispersed oil plumes are limited and may complicate the monitoring process. A commenter noted that sampling and monitoring programs should acknowledge uncertainties about where an oil plumes may travel.

The Agency recognizes oil distribution analyses may be affected by the data quality used to inform the analysis, which also includes parameters based on assumptions. In addition, trajectory models, which are used to predict the movement of dispersed oil plumes, may have uncertainties associated with modeling parameters. EPA is amending the regulatory text to clarify that oil distribution analyses includes trajectory modeling since this is an essential aspect of dispersed oil movement as the result of dispersant application, particularly in areas where water currents are highly influential to the oil discharge and inform water sampling locations. EPA agrees with concerns that these uncertainties could affect sampling and monitoring programs. Therefore, the Agency is amending the regulatory text to recognize uncertainties associated with trajectory modeling as part of the distribution analysis.

A commenter suggested including a NOAA SSC in the review of data provided in this section to provide valuable credibility and support to the OSC, while noting that perceptions of the responsible party directing the process should be avoided. Another commenter suggested EPA might want to consider including directions for the use of local expertise in these analyses.

The NCP describes the role of SSCs under 40 CFR 300.145(c) to include providing scientific support for operational decisions and for coordinating on-scene scientific activity during a response, as requested by the OSC. Coordinating on-scene scientific activity during a response may include consideration of input from local experts. The NCP also describes the OSC's roles and responsibilities under 40 CFR 300.120, which includes directing response efforts and coordinating all other efforts at the scene of a discharge. As a result, EPA believes the NCP already sufficiently recognizes the SSC's role in support of the OSC.

Some commenters stated that the rule needs to be clearer on what is required for surface monitoring and what is required for subsea monitoring, suggesting that each subsection should be divided into the aspects. These commenters also suggested that EPA should consider changing "best available technologies" to "best practicable technologies" in this section, to avoid equipment that is not suitable for field conditions. A commenter stated that the best available technology requirement should acknowledge aerial photography as a tool to measure effectiveness, as this was a key method of assessment during the Deepwater Horizon response. The commenter also stated that the relative effectiveness of surface application should be determined using the SMART protocols, noting that the amount of oil on the surface to which dispersants are being sprayed is impossible to determine, so effectiveness can't be quantified, and that the analytical equipment often cannot return to the spray site in time to capture the information requested as the dispersant plume quickly dilutes or cannot be found.

The Agency believes the final rule is clear relative to the requirements for subsurface and surface monitoring and that dividing the monitoring section into separate subsections is unnecessary. The Agency has noted in the regulatory text and provided additional clarification in

this preamble to delineate where requirements are different. EPA recognizes the commenter's concern relative to the term "best available technology" but disagrees that it should be changed to "best practicable technologies" to avoid equipment that is not suitable for field conditions. The proposal did not specify equipment in the *Oil Distribution Analyses* section, but rather included the term "best available technology" to capture advances in technology (e.g., modeling and equipment). The intent was to ensure these advances in characterizing the dispersant effectiveness and oil distribution continue to be implemented. For example, oil distribution is typically informed by trajectory modeling to predict the movement of dispersed oil plumes. The Agency recognizes that improvements to trajectory modeling continue over time and seeks to incorporate such advancements in the new monitoring requirements. The Agency is finalizing the term "considering available technologies" instead of the term "best available technology." Available technologies used and their applicability to the specific discharge situation should be described in the DMQAPP. The Agency believes this new provision provides the opportunity for the OSC to consider relevant technologies and addresses the intent to capture advances in technology.

EPA disagrees that aerial photography, as a tool to measure effectiveness, should be acknowledged as a best available technology. EPA recognizes that the SMART Tier I protocol bases initial dispersant effectiveness assessment using photographic job aids or advanced remote sensing instruments flying over the oil slick with a trained observer. EPA also recognizes that NOAA developed a Dispersant Application Observer Job Aid, which is a field guide for responders trained in observing and identifying dispersed and undispersed oil, describing oil characteristics, and reporting this information to decision-makers. However, EPA is unaware of any similar NRT-approved protocols or NOAA-developed job aids to assess the initial effectiveness of subsurface dispersant application. Furthermore, the requirements for monitoring surface dispersant application for atypical dispersant applications necessitate specific considerations beyond those addressed by SMART. According to the 2013 NRT *Environmental*

*Monitoring for Atypical Dispersant Operations* guidance document, such atypical uses of dispersant during a response were not addressed in the existing SMART monitoring program. While some monitoring requirements are only included in the SMART Tier III protocol (e.g., turbidity, pH, conductivity, temperature), other requirements (e.g., in-situ droplet size distribution) important to understanding dispersant effectiveness are not.

A commenter stated that the relative effectiveness of the surface application should be determined by using the SMART protocols, but also noted the analysis equipment often cannot return to the spray site in time to capture the information requested, because the dispersant plume quickly dilutes or cannot be found. According to the SMART protocols, Tier II and III use towed fluorometry to characterize effectiveness, requiring the vessel to pass through the oil slick after dispersant is applied. For the SMART Tier II protocol, the team collects data in three primary target locations: (1) ambient background water (no oil); (2) oiled surface slicks prior to dispersant application, and (3) post-application, after the oil has been treated with dispersants. The Tier III protocol follows procedures from the Tier II protocol, and in addition collects information on the transport and dispersion of the oil in the water column to help verify that the dispersed oil is diluting toward background levels. The commenter's characterization that the dispersant plume quickly dilutes or cannot be found seems contrary to their recommendation to use the SMART protocols data collection procedures. The Agency notes that the commenter did not provide supporting evidence that the dispersed oil plume always quickly dilutes and cannot be found. The assumption that dispersed oil plume quickly dilutes and cannot be found does not account for the many factors that impact dispersant effectiveness, including for example the specifics of the discharge situations (e.g., continuous discharges), the weathering of the oil, and the mixing conditions. Both the SMART protocols and the monitoring provisions finalized in this action are designed to provide feedback on the efficacy of dispersant application in dispersing the oil. The Agency believes monitoring provides information on dispersant effectiveness, including for those occurrences of non-detection of dispersed oil after dispersant



application. The Agency also notes that advances in technology using remote sensing vehicles may allow for data collection prior to and after dispersant application with responders in an offset area to inform the fate and transport of the oil plume.

A commenter stated the monitoring requirements need the concurrence of the DOI's regional response team (RRT) representative as well, since these results provide information relevant to DOI's trust resources. In addition, a commenter stated that because of inherent conflict of interest, a qualified third party acceptable to the OSC, EPA, and the DOI RRT representatives should conduct all monitoring.

EPA recognizes conflicts of interest concerns. The Agency notes that the NCP addresses the OSC's oversight role of the responsible party as part of the OSC's authority. The final rule does not preclude the OSC from seeking a qualified third party to conduct additional monitoring or from consulting with relevant governmental agencies, or from performing or having a third party perform monitoring. The Agency disagrees that decisions regarding monitoring of oil distribution and weathering are left up to the responsible party as the Clean Water Act and the NCP give the OSC clear authority to direct the responsible party during a response. The Agency also disagrees that the responsible party is the primary advisor for aspects of dispersant decision-making and monitoring. The monitoring requirements are intended to provide decision-makers, whose roles and responsibilities are described in the NCP, with relevant information to consider. The monitoring requirements do not prevent the OSC and other response decision-makers from considering monitoring information, including monitoring information collected by other entities besides the responsible party, to also be used to inform dispersant use decisions. While the final rule places the monitoring requirements on the responsible party, these requirements should not be interpreted or perceived as the responsible party directing the process or controlling how the dispersant effectiveness and dispersed oil fate data are interpreted. The Agency notes that the NCP already provides for natural resource trustee input for dispersant use as a response option

under 40 CFR 300.910 – Authorization of Use, and §300.305(e) - Phase II - Preliminary assessment and initiation of action.

#### ***E. Ecological Characterization***

The new provisions include requirements for the responsible party to characterize the ecological receptors (e.g. aquatic species, wildlife, and/or other biological resources) and their habitats that may be present in the discharge area and their exposure pathways. As the OSC's oversight role over the responsible party is already established in the NCP, the Agency has removed the phrase "in consultation with the OSC" for §300.913(d) ecological characterization. As part of this characterization, the responsible party must include in this characterization those species that may be in sensitive life stages, transient or migratory species, breeding or breeding-related activities (e.g., embryo and larvae development), and threatened and/or endangered species that may be exposed to the oil that is not dispersed, the dispersed oil, and the dispersant alone. The responsible party must also estimate an acute toxicity level of concern for the dispersed oil using available dose/response information relevant to potentially exposed species.

Several commenters agreed with EPA's proposed language requiring ecological characterization and the use of species sensitivity distributions and ecotoxicity benchmarks. These commenters emphasized that careful monitoring of biological receptors is important but commented that this should be done by independent scientists, and not by the responsible party because of conflict of interest. Another commenter generally supported the proposed additions to §300.913(d). Another commenter stated that ecological characterizations should be done by scientists on behalf of local resource agencies, given that the required information can be complex and subtle, requiring expertise on seasonality, life cycles, habitat interactions, important and sensitive habitats, and other physical and biological factors that influence how ecosystem components respond to oil, dispersant, and dispersed oil.

Some commenters offered amendments to this section. A commenter stated that EPA should require consultation with the DOI and Department of Commerce (DOC) natural resource

trustees, not just the OSC, when developing ecological-receptor characterization. Another commenter stated that sensitive receptors and toxicity thresholds should be developed at a local/regional level based on the marine ecosystem, food web, abundance of primary and secondary producers, and other factors that influence ecotoxicity, given significant variation throughout the United States.

The Agency recognizes commenters' position that independent scientists conduct monitoring of biological receptors, rather than the responsible party, because of potential conflict of interest. The Agency notes that the NCP addresses the OSC's oversight role of the responsible party. The monitoring amendments in the final rule do not preclude the OSC from seeking independent parties to conduct additional monitoring, including from local, state and federal agencies. EPA agrees with concerns that the required information can be complex and subtle, requiring expertise on seasonality, life cycles, habitat interactions, important and sensitive habitats, and other physical and biological factors that influence how ecosystem components respond to oil, dispersant, and dispersed oil. Furthermore, the NCP provides for natural resource trustee input for dispersant use as a response option under 40 CFR 300.910 – Authorization of Use, and §300.305(e) - Phase II - Preliminary assessment and initiation of action. Therefore, the Agency does not believe it is necessary for additional requirements under the monitoring section to recognize the role and responsibilities of natural resource trustees relative to the responsible party developing ecological-receptor characterization.

The Agency agrees with commenters that sensitive receptors and toxicity thresholds should consider relevant local/regional factors. EPA agrees with commenters that the review of acute toxicity information should include actual toxicity test results of potentially exposed species in the area of the spill, but the Agency also recognizes that the use of a surrogate species when constructing the species sensitivity distribution (SSD) may be necessary if relevant toxicity data for site-specific species is unavailable.

Some commenters stated that they support environmental monitoring that contributes to operational decision-making, but also stated that the required monitoring to determine possible environmental effects is too time consuming to support dispersant operations decisions and that conducting the required ecological characterization of the spill site may not be possible in the available response time frame. The commenters stated that if the untreated oil is likely to drift ashore and impact a sensitive coastal resource within a day or two unless it is dispersed, there will be a very finite period of time for such considerations suggested in the proposed rule. Another commenter agreed that monitoring to determine possible environmental effects is too time consuming and added that monitoring required to determine possible environmental effects is already accommodated within the existing Incident Command System (ICS) structure (e.g., wildlife team and the NRDA team). A commenter stated that while known ecological benchmarks may be constructive, it is not clear how exceedances of the thresholds would impact decision-making in practice. This commenter stated that requiring dispersant operations to stop due to a single-species exceedance may result in higher environmental damage overall. The commenter suggested that SSDs are a misuse of the method that is counter to establishing frameworks appropriate to dynamic ocean settings. The commenters stated that NEBA should be the basis to make operational decisions on whether dispersants and/or other agents should be used during a response.

The Agency agrees with comments that support environmental monitoring as contributing to operational decision-making, but disagrees with the comment that monitoring to determine possible environmental effects is too time consuming to support dispersant operations decisions and that monitoring required to determine possible environmental effects is already accommodated within the existing ICS organizational structure (e.g., wildlife team and the NRDA team). A goal of NRDA is to compensate the public for losses to natural resources and resource services resulting from injury as a result of an oil discharge. While a NRDA team may be recognized in the ICS, it is independent of, and complementary to, the response action. The

monitoring requirements are tailored to dispersant use and to inform response decision-making regarding that use, while other ICS organizations focus on general environmental effects of the response, not necessarily related to dispersant use. The Agency also disagrees that conducting the required ecological characterization of the spill site may not be possible in the available response time frame. The premise that untreated oil is likely to drift ashore and impact a sensitive coastal resource within a day or two unless it is dispersed implies that no other response options are available to prevent impacts to sensitive coastal resources and that these sensitive coastal resources are the sole response priority to consider in determining dispersant use. Dispersants are not the only option for oil spill response: other response options may also prevent or lower overall environmental damage. When responding under the NCP, decisions on dispersants and/or other chemical agents made by the OSC and other federal agencies with roles and responsibilities under the NCP during a response are to be made in accordance with the NCP. While there is no prohibition on the use of environmental tradeoff methodologies, the use of such methodologies must be in conformance with the statutory and regulatory authorities that govern dispersant use. Furthermore, the Agency noted in the proposed rule (80 FR 3398) relevant sources of information (e.g., environmental assessments or statements, Federal and state environmental databases, ACP-Fish and Wildlife and Sensitive Environments Plan Annex; NOAA-Environmental Sensitivity Indices) that the responsible party may refer to in developing the characterization of ecological receptors. In addition, applicable facility or vessel response plans may also have relevant information. It is important to note that this final action is not requiring this information to be included in these planning documents, rather that these documents may serve as resources of relevant information. Finally, it is unclear how methodologies cited and supported by commenters evaluate environmental trade-offs for decision-making without the characterization of ecological receptors.

Another commenter noted that the phrase “but not be limited to” should be added to a phrase in the proposal so the term “include” is not interpreted as limiting. “The Agency believes

that the ecological characterization should include, but not be limited to, those species that may be in sensitive life stages....”

The Agency acknowledges the commenter’s suggestion that the phrase “but not be limited to” be added to a phrase in the proposal so the term “include” is not interpreted to be limiting, so that the sentence reads: “The Agency believes that the ecological characterization should include, but not be limited to, those species that may be in sensitive life stages...”. The Agency did not intend and does not believe that the term “including” is limiting. However, the Agency is modifying the sentence in the proposal to reflect this suggested change for clarity.

A commenter stated that the regulation should specify that an invitation to participate, at least in a consultation and review role, should be extended to the appropriate federal, state, and local authorities. A commenter stated that EPA should add to §300.913(d) that a DOI representative should participate in this process.

Applicable Area Contingency Plans include input from relevant local, state, and federal agencies whose roles and responsibilities are identified in the NCP for the Area Committee. While the Agency did not propose to amend requirements for Area Contingency Planning and those requirements are outside the scope of this final action, EPA recognizes the Area Committee’s role in ecological characterization as provided in the Fish and Wildlife and Sensitive Environments Plan in 40 CFR 300.210(c)(4). The final rule does not prohibit the OSC from seeking input from the appropriate federal, state, and local authorities.

A commenter asked EPA to clarify that toxicity monitoring is required following dispersant applications. Another commenter suggested the following revisions to EPA’s approach to ecotoxicity benchmarks (EBs):

- The proposed approach will not fully characterize potential impacts on biological resources. Where EBs exist for these other hydrocarbon constituents, measured concentrations of those parameters need to be compared to these more specific toxicological benchmarks;

- The toxicity level should also include the dispersant since it has been found that dispersants alone are generally less toxic than oil, but that most dispersant and oil mixtures are more toxic than oil alone;
- The proposed approach to compare water concentrations with EBs for heavy metals and total petroleum hydrocarbon will not fully characterize potential impacts on biological resources;
- Examining only acute toxicity data does not capture the full effects of a spill, since it does not take into account indirect or sub-lethal effects, which could also alter populations and ecological communities;
- The review of acute toxicity information should include actual toxicity test results of potentially exposed species in the area of the spill, since the use of a surrogate species could vastly underestimate the actual toxicity of species in the area;
- EPA should calculate separate SSDs for unique environments;
- Toxicity testing using natural light will be important given the well documented phenomenon of photo-enhanced toxicity of certain oil constituents; and,
- The commenter expressed concern about EPA's approach to derive chronic toxicity benchmarks by applying safety factors to the acute toxicity EBs because the specific chemicals and toxicity mechanisms involved in acute toxicity are different from those involved in chronic toxicity.

The proposed rule discussed an approach to monitor acute toxicity in the water column by comparing TPH concentrations in water samples to TPH-based EBs or to chronic toxicity benchmarks derived by applying a safety factor to the acute toxicity EBs. The Agency stated that SSDs, which allow for species relevant to the location of the discharge to be considered, could be developed for representative oils (e.g., crude oils) using existing acute toxicity values where sufficient species diversity are available. The Agency acknowledges that examining only acute toxicity data does not capture the full effects of a spill because it does not take into account

indirect or sub-lethal effects. The Agency recognizes that specific chemicals and toxicity mechanisms involved in acute toxicity can be different from those involved in chronic toxicity. However, applying safety factors to the acute toxicity-based benchmarks to derive chronic benchmarks is not intended to discern toxicity mechanisms; rather it is intended to account for potential toxic impacts to relevant species. Furthermore, EPA recognizes that not all acute toxicity data is derived using similar exposure conditions and that SSDs should be calculated from acute toxicity data that reflects the site-specific exposure profiles. Finally, EPA recognizes the proposed approach does not fully characterize potential impacts on biological resources from other exposure mechanisms that may cause adverse impacts, such as oil smothering and coating.

While the Agency did not propose to establish specific EB thresholds, EPA recognizes that EBs should be consistent with information in applicable ACPs. The Agency noted in the proposed rule that EBs could be computed from the fifth percentile of the SSD as the hazard concentration 5 percent (HC5), as they are considered protective of 95 percent of species, have been used by EPA for developing ambient water quality criteria, and are generally accepted by the international risk science community. For the reasons above, EPA disagrees with commenters who suggested that SSDs is counter to establishing frameworks appropriate to dynamic ocean settings. Furthermore, EPA is clarifying the final rule text to specify that acute toxicity levels of concern are determined using the SSD approach.

EPA did not propose in the monitoring section that dispersant operations stop due to a single-species exceedance. However, EPA does not agree that stopping dispersant use over a single species exceedance will necessarily result in higher environmental damage overall. Dispersants are not the only available response tool, and other response options may also lower overall environmental damage. EPA believes that Congress' primary intent in regulating products (e.g., dispersants) under Subpart J is to protect the environment, including the water column, from possible deleterious effects caused by the application or use of these products. Decisions on the use of dispersants and other agents used during a response are to be made in accordance with



the NCP and the governing statute(s). Environmental tradeoff methodologies where dispersants are considered must be in conformance with the statutory and regulatory authorities that govern dispersant use.

#### ***F. Immediate Reporting***

The new provisions require the responsible party to immediately report to the OSC and, in coordination with the OSC, to the RRT any: 1) deviation of more than 10 percent from the mean hourly dispersant use rate for subsurface application, based on the dispersant volume authorized for 24 hours use, and the reason for the deviation; and 2) ecological receptors of environmental importance, and any other ecological receptors as designated by the OSC or the Natural Resource Trustees, including any threatened or endangered species that may be exposed based on dispersed plume trajectory modeling and level of concern information.

Several commenters supported EPA's proposed immediate reporting provisions. Some commenters advocated for a 10 percent threshold for reporting deviations from the planned application rates for surface application in addition to subsurface application, while another commenter stated they do not support any subsurface application. A commenter stated that because the responsible party is already required to report hourly surface application rates on a daily basis under §300.913(f), the commenter believes that adding a requirement for immediate reporting requirement in the case of deviations will add little, if any, marginal compliance costs.

In this action, the Agency is not including a reporting requirement of a 10 percent deviation threshold for reporting requirement from the planned application rates for surface dispersant application. The Agency recognizes differences in the subsurface and surface application of dispersants. For a continuous discharge, subsurface applications may occur uninterrupted at relatively few discharge locations. Surface application is typically made by one or more aircraft which have a relatively limited capacity to apply dispersant over multiple oil patches. This limited capacity requires aircraft to refuel and resupply. While multiple aircraft may be used, deviations of surface dispersant application rate from a single aircraft are not

expected to confound monitoring data interpretation in a similar manner as 10 percent deviation from subsurface application. Furthermore, the Agency is requiring daily reports of the specific hourly dispersant application rate and total amount of dispersant used for surface application to monitor dispersant use activity. The daily reports will inform changes in surface dispersant application usage. Finally, the RIA does not include a compliance cost because the proposed provision addressing more than 10 percent deviation for surface applications is not being finalized.

A commenter stated that all reports should simultaneously be made public. EPA recognizes the commenter's request that all reports should simultaneously be made public. While EPA shares the commenter's desire to make this information publicly available in a timely fashion, the Agency disagrees that this reporting should occur simultaneously with reporting to the OSC. Public communications authorities under the NCP are outside the scope of this action. The Agency notes that the OSC directs response efforts and coordinates all other efforts at the scene of a discharge in accordance with the NCP, including public information and community relations. The NCP provides instruction to the OSC on ensuring all appropriate public and private interests are kept informed and that their concerns are appropriately considered throughout a response. The Agency believes the OSC should be given the opportunity to evaluate response-related information and communicate relevant results to the public within the existing NCP framework.

A commenter suggested that specifics required in §300.910(e) should be provided to the OSC and RRT. A commenter requested that any field observations of impacts to sensitive species be reported to the OSC and trustee agencies. This could include dispersant applications which inadvertently spray birds, marine mammals, sea turtles, or other sensitive species. While the commenter refers to §300.910(e), the Agency believes that the commenter intended to include §300.913(e) because the heading of the section to the comment referred to §300.913(e-f). The Agency agrees that the RRT, which includes the natural resource trustees, should receive

this information within the command structure of the National Response System (NRS).

Working within the command structure provides an orderly and efficient review of monitoring and other response-related information by the OSC and allows the OSC to develop situational awareness and efficiently and effectively collaborate with agencies designated in the NCP that have relevant roles and responsibilities in the response. EPA has revised the regulatory language in the final rule by adding a new provision, §300.913(g), to provide that the responsible party must immediately report to the OSC and coordinate with the OSC to provide the applicable RRT(s) (including any incident-specific RRTs) with this information. The Agency notes that including the RRT(s) as recipients of the immediate reporting information addresses a commenter's request to include natural resource trustees.

Some commenters stated that EPA should not develop requirements for daily authorizations of dispersant quantities. Another commenter also noted that the rule requires reporting based on deviations from authorized dispersant application in a 24-hour period, stating that EPA should not have daily authorizations for dispersant application because such restrictions would tremendously complicate dispersant operations and circumvent the NEBA process.

EPA did not establish requirements on daily authorization of dispersant quantities in the final rule on the monitoring requirements. The Agency is establishing an immediate reporting provision in this final action to provide a margin for variation within 10 percent of the mean hourly subsurface dispersant application rate to account for equipment performance. The Agency believes this margin adequately accounts for variations in dispersant injection equipment without being overly restrictive. The intent of the requirement is for immediate reporting of more than 10 percent deviations for the subsurface dispersant application that were authorized during that reporting period. EPA did not intend to require, and §300.913(e) does not establish, that authorization is required in 24-hour increments. The OSC makes authorization of use decisions within the NCP framework. Authorization of use is outside the scope of the monitoring requirements in this final action. While an environmental trade-off framework may inform

dispersant use, it is not required under the NCP. Results from daily water column sampling provide input data to refine predictions of the likely dispersed oil direction using trajectory modeling and may also inform decisions to alter dispersant application in order to minimize effects on ecological receptors, including biological resources.

A commenter stated real-time ecological receptor analysis is unrealistic and should be part of a Consensus Ecological Risk Assessment (CERA)/NEBA process. Another commenter requested that any field observations of impacts to sensitive species be reported to the OSC and trustee agencies. The new monitoring requirements provide that the responsible party will characterize the ecological receptors (e.g., aquatic species, wildlife, and/or other biological resources), their habitats, and exposure pathways that may be present in the discharge area. The Agency understands that some ecological receptors are likely to be impacted and is clarifying that the immediate reporting requirement focuses on ecological receptors of environmental importance, as well as any other ecological receptors as identified by the OSC or the natural resource trustees, including threatened or endangered species that may be exposed to dispersed oil based on trajectory modeling and the estimated acute toxicity level of concern. EPA recognizes that the OSC or the natural resource trustees may also want to include critical habitats as applicable within the immediate reporting requirements for ecological receptors. The NCP already provides an existing organizational structure that allows the natural resource trustees to relay any requests they have regarding the monitoring requirements and resulting information to the OSC. The Agency is revising the regulatory language in the final rule to reflect this clarification. This revision also addresses a commenter's request to recognize prey species which these receptors depend upon for food that may be impacted by the discharge or the response.

A commenter said the OSC should have discretion to determine the frequency of reporting and that the rule does not specify what happens if the reporting requirements are not met for any reason. The Agency recognizes that the OSC may require other immediate notifications beyond those provided in the final rule and that the final rule provides a minimum

set of immediate reporting criteria. Finally, the Agency notes that enforcement of regulatory provisions is outside the scope of the final rule. The final rule does not change any existing enforcement authorities.

### ***G. Daily Reporting***

The new provisions require daily reporting by the responsible party to the OSC and to the RRT water sampling and data analyses collected in §300.913(b). These reports are to include: 1) For each application platform, the actual amount of dispersant used for each one-hour period, and the total amount of dispersant used for the previous 24-hour reporting period; 2) all collected data and analyses of those data within a time frame necessary to make operational decisions (e.g., within 24 hours of collection), including documented observations, photographs, video, and any other information related to dispersant use, unless an alternate time frame is authorized by the OSC; 3) for analyses that take more than 24 hours due to analytical methods, provide such data and results as available but no later than 5 days after sample collection, unless an alternate time frame is authorized by the OSC; and 4) estimates of the daily transport of dispersed and non-dispersed oil and associated volatile petroleum hydrocarbons, and dispersants, using available technology as described in §300.913(c).

Section 300.913(f)(1) of the final rule was altered to provide clarity. The text “For each application platform, the ...” was added prior to the draft language, to ensure that the reporting would be for each platform, instead of the response as a whole. The term “application platform” includes individual aircraft, vessels, and any other structures, devices, or other means that are used to apply dispersants. This section was also modified, replacing the term “actual dispersant application rate for each one-hour period” with “the actual amount of dispersant used for each one-hour period”. This revision clarifies that the reported information must reflect the actual amount of dispersant applied each hour, rather than an hourly rate based on the total amount of dispersant applied averaged over a 24-hour period. The requirement is intended to show hourly changes of the actual amount of dispersant used, which a calculated average hourly rate would

not provide. This information will allow the OSC and RRT to better analyze if the application rates are at, below, or exceeding the authorized quantities, if dispersant use is per manufacturer's recommendations, and if the response actions are effective.

EPA is also revising the regulatory text in the final rule to reflect that §300.913(c) changed "...best available technology..." to "...considering available technologies..." which includes trajectory modeling. See the *Oil Distribution Analyses* discussion in this preamble. The Agency is also revising the final rule text to include RRT as recipients of the daily reporting information for similar reasons as described in *Immediate Reporting* discussion in this preamble.

Several commenters supported EPA's proposal to require daily reporting of sampling and data analyses within a time frame necessary for making sound operational decisions. However, a commenter stated that existing sampling and analytical methods might not provide complete or accurate information. They requested that EPA identify suggested methods or models that can accurately estimate the "daily transport of dispersed and non-dispersed oil" with sufficient accuracy to inform the coordination of monitoring activities.

EPA acknowledges a commenter's concern that existing sampling and analytical methods might not provide complete or accurate information. However, the Agency believes existing sampling and analytical methods continue to improve and generally serve their intended purpose for decision-making during a response. The Agency recognizes that there may be other sampling and analytical methods used to inform other aspects of the response as a result of the oil discharge, such as those used in injury assessment that are conducted to support the NRDA process. Results from daily water column sampling conducted by the responsible party would provide input data to refine predictions of the likely dispersed oil direction using trajectory modeling. The daily reporting provisions requires the responsible party to report the estimated daily transport of dispersed and non-dispersed oil, associated volatile petroleum hydrocarbons if applicable, and dispersants, considering available technologies as described in §300.913(c). The Agency is not including suggested methods or models to estimate the "daily transport of

dispersed and non-dispersed oil.” Rather, the Agency is establishing a framework in which the responsible party must identify sampling and analytical methods within a DMQAPP that provides the OSC and pertinent response agencies context for the collected data. This approach allows sampling and analytical methods to continue to advance without the need to periodically modify regulatory text to reflect any such advances. Finally, for analyses that take more than 24 hours due to analytical methods, the Agency is clarifying that the responsible party report data and results if it becomes available prior to the 5-day period. Reporting results and data as soon as it becomes available avoids unnecessary delays in providing decision-makers, including relevant regulatory agencies, with timely information.

A commenter noted that the requirements for daily reporting of water sampling data in §300.913(f) should only apply to subsea dispersant injection and are not useful for dispersant decision-making. The commenter stated that daily sampling and testing is arbitrary, overly burdensome, and unnecessary, suggesting that OSCs should have discretion in the frequency of sampling after the initial efficacy tests. Additionally, this commenter stated that the five day turnaround is unrealistic, given that it can take several days for sample transport and analysis. This commenter cited the quantity of samples and backlogs that resulted from the Deepwater Horizon response.

EPA disagrees with the comment that stated daily reporting of water sampling data is not useful to dispersant decision-making, burdensome, or unrealistic given the experiences of the Deepwater Horizon oil spill. The final monitoring provisions require daily reporting of sampling and data analyses collected within the time frame necessary to make operational decisions unless an alternate time frame is authorized by the OSC. Additionally, a schedule is required for any data analyses that require time beyond 24 hours due to analytical methods; this schedule is not to exceed five days (i.e., 120 hours) unless authorized by the OSC. Timely sample analyses afford the OSC and other responders and decision makers with multiple relevant data that can be analyzed together to inform situational awareness of dispersant operations and adjust dispersant

application as necessary. The Agency believes that a five-day window for analyses requiring additional time provides an adequate opportunity for the RP to arrange to conduct all requested analyses in a timely manner without being overly restrictive. The Agency believes the final rule provides flexibility for the OSC to provide an alternative time frame that is operationally relevant for analyses that take more than 24 hours due to analytical methods.

The Agency disagrees that daily water sampling and testing is burdensome and therefore also disagrees that only the OSC should determine the sampling frequency after initial efficacy tests. The Agency believes monitoring dispersant use in the field informs the OSC and response support agencies on its overall effectiveness, including potential environmental effects and transport of dispersed oil. Daily reporting serves to ensure information is received in a timely manner. The final rule provides notification for a responsible party to identify what analytical resources will be needed ahead of time rather than wait until an incident occurs to do so. A responsible party can also arrange for a schedule to prepare, transport, process, and analyze samples as part of response planning. The Agency believes that the responsible party can identify analytical processing resources (e.g., analytical laboratories) and arrange a sampling and processing schedule prior to any incident.

The Agency disagrees that daily reporting of water sampling data should apply only to subsurface dispersant injection. Daily reporting of sampling data and other relevant information equally serves to inform surface dispersant application. The daily reporting requirement for collected data and analyses is necessary to make operational decisions, including documented observations, photographs, video, and any other information related to dispersant use, unless an alternate time frame is authorized by the OSC. While the responsible party shall provide data and results within five days, the final action provides flexibility to establish an alternate time frame authorized by the OSC for analyses that take more than 24 hours due to analytical methods.



A commenter also suggested combining the *Daily Reporting* section with the *Immediate Reporting* section and included recommended language. EPA believes keeping these sections separate more clearly identifies the specific requirements within the two different time frames.

Another commenter stated that EPA should make plans to protect worker health and public health required in ACPs along with already required plans to protect wildlife and to require daily public notification of product use, location, and quantity. The Agency notes that the NCP requires compliance with applicable worker health and safety regulations, including OSHA, under 40 CFR 300.150. Amendments to worker health and safety requirements under 40 CFR 300.150 and to Area Contingency Planning requirements under 40 CFR 300.210(c) are outside the scope of this final action on monitoring requirements. The Agency refers readers to the *Immediate Reporting* discussion where similar comments are addressed relative to public notification of dispersant-related information for further analysis of this issue.

## **VI. Overview of New Rule Citations**

The Table below provides an overview of the new rule citations under 40 CFR part 300, Subpart J, for a quick reference of the changes. New section, §300.913, *Monitoring the Use of Dispersants*, adds regulatory requirements for monitoring certain prolonged surface and subsurface use of dispersants.

**Section 300.913 Distribution Table**

§300.913 Monitoring the Use of Dispersants	General Applicability
§300.913(a)	Information on Dispersant Application
§300.913(b)	Water Column Sampling
§300.913(c)	Oil Distribution Analyses
§300.913(d)	Ecological Characterization
§300.913(e)	Immediate Reporting
§300.913(f)	Daily Reporting

§300.913(g)	Immediate and Daily Reporting to RRTs
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## VII. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <http://www2.epa.gov/laws-regulations/laws-and-executive-orders>.

### ***A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563:***

#### ***Improving Regulation and Regulatory Review***

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. This action raises novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order. Any changes made in response to OMB recommendations have been documented in the docket for this action. In addition, EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis, “*Regulatory Impact Analysis, National Oil and Hazardous Substances Pollution Contingency Plan; Subpart J Monitoring Requirements*”, is available in the docket for this action.

### ***B. Paperwork Reduction Act (PRA)***

The information collection requirements in this final action have been submitted for approval to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR No. 2675.01 (OMB Control No. 2050-NEW). A copy of the ICR is provided in the docket for this rule and it is briefly summarized here. The monitoring provisions of the final rule include documentation of information about dispersant application; water sampling, oil distribution, and ecological characterization analysis; and, immediate and daily reporting.

For this ICR, EPA has estimated an annualized cost for monitoring oil discharges for dispersants in the range of \$32,000 to \$3.0 million per year. This estimated range reflects the fact that costs can vary significantly depending upon the frequency, volume, duration, and location of

oil discharges. EPA based its estimates on a range of oil discharge scenarios capturing different spill sources, volumes, and monitoring durations. The annual monitoring cost also reflects EPA's estimated applicable-discharge rate of 0.2 incidents per year, or one applicable discharge every five years, based on EPA's analysis of historical discharges.

EPA has carefully considered the burden imposed upon the regulated community by the regulations. EPA believes that the activities required are necessary and, to the extent possible, has attempted to minimize the burden imposed. The minimum requirements specified in the final rule are intended to ensure that, when needed, product use is properly monitored in the field so that the oil discharge response is performed in a manner protective of human health and the environment.

*Respondents/affected entities:* Oil discharge responsible parties.

*Respondent's obligation to respond:* Mandatory (40 CFR Part 300, Subpart J).

*Estimated number of respondents:* 0 – 1 per year

*Frequency of response:* 0.2 time per year

*Total estimated cost:* \$32,000 - \$3,033,000 (per year for monitoring oil discharges).

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the Agency will announce that approval in the Federal Register and publish a technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities contained in this final rule.

### ***C. Regulatory Flexibility Act (RFA)***

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities.

EPA conducted a small business analysis consistent with the Agency's 2006 small business guidance. The Agency's analysis indicates that 9,527 affected entities are small businesses in the following industries: Crude Petroleum Extraction, Natural Gas Extraction, Petroleum Refineries, Petroleum Bulk Stations and Terminals, Natural Gas Extraction, Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals), Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals), Deep Sea Freight Transportation, Coastal and Great Lakes Freight Transportation, and Pipeline Transportation of Crude Oil.

In conducting the small business analysis, the agency compared the incremental annualized compliance cost to the annual sales revenue for the smallest entities. The results indicate that if a small entity is responsible for a relatively large oil discharge, then the impact on that individual entity could be significant. However, there are important factors to consider when assessing the rule's overall effect on small businesses, including that historically, the RPs for applicable discharges are not very small entities, which constitute the vast majority of potential impacted entities in this analysis. In addition, the rarity of applicable discharges historically suggests that there will be only one entity affected by the rule (whether significantly or nonsignificantly) every five years, on average. For these reasons, EPA concludes that the final rule's requirements will not have a significant impact on a substantial number of small entities (SISNOSE). The small business analysis is available for review in the Regulatory Impact Analysis (RIA).

#### ***D. Unfunded Mandates Reform Act***

This action does not contain any unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This final rule imposes no new enforceable duty on any state, local, or tribal governments or the private sector.

#### ***E. Executive Order 13132: Federalism***

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

#### ***F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments***

EPA has concluded that this action may have tribal implications because all tribes can be affected by oil spills and the subsequent use of oil spill mitigating agents, such as dispersants and bioremediation agents. However, this action will neither impose substantial direct compliance costs on tribal governments, nor preempt Tribal law, similarly to the effect on states.

EPA consulted with tribal officials under EPA Policy on Consultation and Coordination with Indian Tribes early in the process of developing this regulation to enable them to have meaningful and timely input into its development. The NCP is the federal government's blueprint for responding to both oil spills and hazardous substance releases. Among other provisions, Subpart J of the NCP governs environmental monitoring of dispersants and other chemical agents to respond to oil spills in jurisdictional waters. Under the NCP, tribes are included in the definition of "State" found in 40 CFR 300.5 except where specifically noted, and may participate as members of Area Committees, on RRTs, and on Tribal Emergency Response Commissions. See 40 CFR 300.5.

EPA's government-to-government consultation period occurred from March 11, 2015, to March 26, 2015, when EPA headquarters held five teleconference consultation events that informed tribes of the possible changes to the regulation as it was proposed in the Federal Register. Representatives from 10 tribes, tribal associations and organizations participated. During these calls, senior EPA staff fielded questions about the rulemaking as well as recorded comments and feedback. Tribal leaders and/or their delegated representatives raised questions about the use of dispersants and ensuring habitat and resource protection when responding to oil

spills in Indian Country. EPA considered the input from these consultation calls and coordination activities, in conjunction with public comments, in the final rule development.

In addition to consultation with tribes, EPA also conducted outreach to tribes over the two years before consultation. EPA staff participated in several tribal conferences and meetings where the proposed rulemaking was discussed, and information distributed to all participating tribes. Rulemaking outreach literature promoted awareness and coordination about the proposed regulation.

As required by section 7(a), EPA's Tribal Consultation Official has certified that the requirements of the executive order have been met in a meaningful and timely manner. A copy of the certification is included in the docket for this action.

***G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks***

EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

***H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution or Use***

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The final rule focuses on monitoring requirements to address subsurface and certain surface applications of dispersants that meet applicability criteria specified by the final rule and minimizing potential adverse impacts from their use; thus, the rule will result in greater overall environmental protection. The final rule will not cause reductions in the supply or production of oil, fuel, coal, or electricity; nor will it result in increased energy prices,

increased cost of energy distribution, or an increased dependence on foreign supplies of energy.

***I. National Technology Transfer and Advancement Act***

This rulemaking does not involve technical standards.

***J. Executive Order 12898: Environmental Justice (EJ)***

EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994).

The documentation for this decision is contained in Regulatory Impact Analysis (RIA) for this action. This final rule is consistent with EPA's Environmental Justice Strategy and the Office of Land and Emergency Management (OLEM) Environmental Justice Action Agenda. To address the goals of the Strategy and the Agenda, EPA conducted a qualitative analysis of the environmental justice issues under this final rule.

Historically, EPA has not found any evidence that the use of dispersant agents on oil discharges in the United States has had any disproportionate effect on any environmental justice communities. Moreover, the final rule is anticipated to improve the efficacy of dispersant application activities through monitoring requirements and thereby mitigate what could otherwise occur as adverse impacts from potentially less effective dispersant use. EPA will monitor the implementation of the rule to ensure the monitoring of dispersant agents has no disproportionate effect on any EJ communities.

***K. Congressional Review Act (CRA)***

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

## **List of Subjects in 40 CFR Part 300**

Environmental protection, Area contingency planning, Chemical agents, Daily reporting, Dispersants, Hazardous Substances, Intergovernmental relations, Monitoring, Natural resources, Oil pollution, Oil spills, Oil spill mitigating devices, On-scene coordinator, Quality assurance, Regional response teams, Reporting and recordkeeping requirements, Responsible party.

Dated: July 6, 2021.

Michael S. Regan,  
*Administrator.*

For the reasons set out in the preamble, the Environmental Protection Agency amends 40 CFR part 300 as follows:

### **PART 300—NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN**

1. The authority citation for part 300 continues to read as follows:

**Authority:** 33 U.S.C. 1251 *et seq*; 42 U.S.C. 9601-9657; E.O. 13626, 77 FR 56749, 3 CFR, 2013 Comp., p.306; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p.351; E.O. 12580, 52 FR 2923, 3 CFR, 1987 Comp., p.193.

#### **Subpart J – Use of Dispersants, and Other Chemicals**

2. Add § 300.913 to read as follows:

##### **§ 300.913 Monitoring the use of dispersants.**

The responsible party shall monitor any subsurface use of dispersant in response to an oil discharge, any surface use of dispersant for more than 96 hours after initial application in response to an oil discharge, and any surface use of dispersant in response to oil discharges of more than 100,000 U.S. gallons occurring within a 24-hour period, and shall submit a Dispersant Monitoring Quality Assurance Project Plan (DMQAPP) covering the collection of environmental data within this section to the OSC. When any dispersant is used subsurface in response to an oil



discharge, the responsible party shall implement paragraphs (a) through (g) of this section for the entire duration of the subsurface dispersant use. When any dispersant is used on the surface in response to oil discharges of greater than 100,000 U.S. gallons occurring within a 24-hour period, the responsible party shall implement paragraphs (a) through (g) of this section as soon as possible for the entire or remaining duration of surface dispersant use, as applicable. When any dispersant is used on the surface in response to an oil discharge for more than 96 hours after initial application, the responsible party shall implement paragraphs (a) through (g) of this section for the remaining duration of surface dispersant use.

(a) Document:

(1) The characteristics of the source oil.

(2) The best estimate of the oil discharge volume or flow rate, periodically reevaluated as conditions dictate, including a description of the method, associated uncertainties, and materials.

(3) The dispersant used, rationale for dispersant choice(s) including the results of any efficacy and toxicity tests specific to area or site conditions, recommended dispersant-to-oil ratio (DOR).

(4) The application method(s) and procedures, including a description of the equipment to be used, hourly application rates, capacities, and total amount of dispersant.

(5) For subsurface discharges, the best estimate of the discharge flow rate of any associated volatile petroleum hydrocarbons, periodically reevaluated as conditions dictate, including a description of the method, associated uncertainties, and materials.

(b) Collect a representative set of ambient background water column samples in areas not affected by the discharge of oil, at the closest safe distance from the discharge as determined by the OSC, and in all directions of likely oil transport considering surface and subsurface currents. Collect a representative set of baseline water column samples absent dispersant application at such depths and locations affected by the oil discharge, considering surface and subsurface currents, oil properties, and other relevant discharge conditions. On a daily basis, collect

dispersed oil plume water column samples at such depths and locations where dispersed oil is likely to be present, considering surface and subsurface currents, oil properties, and other relevant discharge conditions. Collect these ambient background, baseline, and dispersed oil plume water column samples following standard operating and quality assurance procedures. Analyze the collected ambient background, baseline, and dispersed oil plume water column samples for:

(1) In-situ oil droplet size distribution, including mass or volume mean diameter for droplet sizes ranging from 2.5 to 2,000  $\mu\text{m}$ , with the majority of data collected between the 2.5 and 100  $\mu\text{m}$  size.

(2) In-situ fluorometry and fluorescence signatures targeted to the type of oil discharged and referenced against the source oil.

(3) Dissolved oxygen (DO) (subsurface only).

(4) Total petroleum hydrocarbons, individual resolvable constituents including volatile organic compounds, aliphatic hydrocarbons, monocyclic, polycyclic, and other aromatic hydrocarbons including alkylated homologs, and hopane and sterane biomarker compounds.

(5) Methane, if present (subsurface only).

(6) Heavy metals, including nickel and vanadium.

(7) Turbidity.

(8) Water temperature.

(9) pH.

(10) Conductivity.

(c) Considering available technologies, characterize the dispersant effectiveness and oil distribution including trajectory, accounting for the condition of oil, dispersant, and dispersed oil components from the discharge location, and describing associated uncertainties.

(d) Characterize the ecological receptors (e.g. aquatic species, wildlife, and/or other biological resources) and their habitats that may be present in the discharge area and their

exposure pathways. The characterization shall include, but is not limited to, those species that may be in sensitive life stages, transient or migratory species, breeding or breeding-related activities (e.g., embryo and larvae development), and threatened and/or endangered species that may be exposed to the oil that is not dispersed, the dispersed oil, and the dispersant alone. The responsible party shall also estimate an acute toxicity level of concern for the dispersed oil using available dose-response information relevant to potentially exposed species following a species sensitivity distribution.

(e) Immediately report to the OSC any:

(1) Deviation of more than 10 percent from the mean hourly dispersant use rate for subsurface application, based on the dispersant volume authorized for 24 hours use, and the reason for the deviation.

(2) Ecological receptors of environmental importance, and any other ecological receptors as identified by the OSC or the Natural Resource Trustees, including any threatened or endangered species that may be exposed based on dispersed plume trajectory modeling and level of concern information.

(f) Report daily to the OSC water sampling and data analyses collected in paragraph (b) of this section and include:

(1) For each application platform, the actual amount of dispersant used for each one-hour period and the total amount of dispersant used for the previous 24-hour reporting period.

(2) All collected data and analyses of those data within a time frame necessary to make operational decisions (e.g., within 24 hours of collection), including documented observations, photographs, video, and any other information related to dispersant use, unless an alternate time frame is authorized by the OSC.

(3) For analyses that take more than 24 hours due to analytical methods, provide such data and results as available but no later than five days, unless an alternate time frame is authorized by the OSC.

(4) Estimates of the daily transport of dispersed oil, non-dispersed oil, the associated volatile petroleum hydrocarbons, and dispersants, using available technology as described in paragraph (c) of this section.

(g) Report all information provided to the OSC under paragraphs (e) and (f) of this section to the applicable RRT(s).

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